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THE JOURNAL OF CUTANEOUS DISEASES

VOL. XXXV DECEMBER, 1917 No. 10

Original Communications

THE PATHOLOGY OF MYCOSIS FUNGOIDES*

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INTRODUCTION

The basis for this article is a series of seven cases of mycosis fungoides which I studied during a period of three years. In all of the cases, excepting one, the clinical diagnosis of mycosis fungoides was confirmed by unanimous consent at representative meetings of various dermatologic societies. One of the cases occurred in private practice; one case comes from the service of Dr. Whitehouse; one from the service of Dr. Kingsbury; the others were encountered in the service of Dr. Trimble at the University and Bellevue Hospital Medical Clinic and in the New York Skin and Cancer Hospital.

Two of the cases were studied postmortem. In one of these, the examination was limited to an investigation of the thoracic and abdominal organs, in the other it was complete. In addition, I have had the opportunity of studying pathologic material from other cases.

REVIEW OF THE LITERATURE

A review of the literature of mycosis fungoides commences most appropriately with the year 1806, when Alibert of Paris described a disease which, at that time, he regarded as a form of yaws, but for which he later created the term "mycosis" on account of the "mushroom-like" appearance of the tumors. Other observers, Biett, Cazenave and Schedel, Dèrvérgie, and Gibert observed similar cases, but considered them with American yaws, in the class molluscum.

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The credit of defining the disease as a special morbid process belongs largely to Bazin, since it was he who did the most to create a place for the particular type of lesion which, with Alibert, he named "mycosis fungoides." Bazin recognized the clinical features of the disease, and distinguished it from syphilis, but not knowing exactly where to classify it he created for it the term "diathesis fungoidique." Still later, however, he believed it to be a form of leprosy, and described several cases under the name of "lepre-indigene."

In 1869, Gillot, in a thesis inspired largely by the researches of Bazin and the histologic studies of Ranvier, concluded that the disease was due to the development of recticular lymphoid tissue in the skin, and therefore should be considered as a cutaneous manifestation of the lymphoid diathesis. He proposed the nase "lymphadenée cutanée." The further studies of the French writers, Landouzy, Debove, Desnos, Barié, Galliard, Demange, and others, confirmed the researches of Gillot and Ranvier, but Siredey, to whom Vidal referred for examination a tumor from one of the six cases which he was studying, regarded it as a variety of lymphosarcoma, resembling the type described by Rindfleisch as "sarcome lymphadénique myxoïde." Vidal himself regarded it as a disease *sui generis,* representing pathologically a lesion midway between lymphadenée and sarcoma.

Up to this time nearly all the literature on the subject was French. The first article which appeared in German was Köbner's in 1864. He gathered his facts from and based his conclusions on the study of four cases in the St. Louis Hospital in Paris. He described the disease as "papillomatous fungoid tumors of the skin" and concluded that the tumors were inflammatory in nature and pointed out the resemblance to granulation tissue.

Hebra described cases in 1872 and 1874. Erasmus Wilson, of England, described the disease as "eczema tuberculatum" in 1874. In the same year Tilbury Fox called it "fibroma fungoides." Auspitz was the first to use the name "granuloma fungoides," which has since been adopted by the majority of modern writers — Stelwagon, Ormsby and others. In 1879-1880 Duhring described a remarkable case of mycosis fungoides which was the first of its kind to be reported in America. This author did not believe that his case was of the same nature as those reported by Hardy, Bazin and Köbner. The only cases known to him at that time which he was willing to recognize as belonging in the same category as his, were those published by Hebra, one in 1872 and the other in 1874. He calls attention to the "mycosis fungoides" of Gillot and Ranvier as one of the diseases from which the type of lesion described by himself was to be differentiated. His interpretation of the pathology of the lesion was that the growths during their early stage were inflammatory, but that later they assumed

the appearance of sarcoma. C. Heitzmann, who made a histologic report of Duhring's case, regarded it as a sarcoma, but Longstreth regarded the growths to be more of the nature of granulation tissue than of genuine neoplasm. Kaposi regarded the disease as a form of sarcomatosis engrafted on a previous dermatosis, eczema or psoriasis. Brocq looked on it as the last phase of any one of a series of dermatoses, including pityriasis rosea and the parapsoriases. Paltauf, in his earlier writings, referred to it as a form of lymphosarcoma; but later published an article in collaboration with von Zumbusch, based on the study of two cases with necropsies, in which he concluded that the disease bore no relation to the neoplasms, and should be classed with the infective granulomas.

These widely divergent opinions in regard to the pathology of the disease have not yet been acceptably adjusted. A review of the literature from 1900 to the present time indicates that the majority of modern observers are of the opinion that mycosis fungoides should be classified with the infective granulomas. There are others, however, among whom may be mentioned Radaelli, who postulate for it a position half-way between an inflammatory and sarcomatous process. Pardee and Zeit regard the disease as an a-lymphemic lymphomatosis, and Strobel and Hazen conclude from a study of two cases in the negro with a necropsy in one, that it should be classified as a lymphoma of the skin.

In an article just published by Symmers, entitled "A new Interpretation of the Pathological Histology of Hodgkin's Disease," the theory is advanced that Hodgkin's disease and related affections, in which he includes mycosis fungoides, are systemic conditions and are neither strictly inflammatory nor neoplastic, but partake of the nature of both of these processes. The theory, briefly stated, is that the provocative agent in Hodgkin's disease causes preliminary hyperplasia of the cells of certain groups of lymph nodes, oftenest the cervical. At the same time certain cells of the bone marrow, notably the eosinophils, eosinophilic myelocytes and multinucleated myeloid giant cells, are discharged into the circulation and filtered out by the hyperplastic lymph nodes or attracted there by chemotactic influences. The sclerotic changes in the lymph nodes in Hodgkin's disease are regarded by Symmers as a purely local and reactive process.

SUMMARY OF DIFFERENT VIEWS

1. A granuloma (Stelwagon, Ormsby, MacLeod, Auspitz, Köbner and others).

2. A cutaneous form of lymphadenoma (Gillot and Ranvier).

3. A lympho-sarcoma (Siredey). (Paltauf, 1902.)

4. A condition halfway between a granuloma and sarcoma (Radaelli).

5. An a-lymphemic lymphomatosis (Pardee and Zeit).

6. A sarcoma engrafted on previous dermatoses, psoriasis and eczema (Kaposi).

7. The last phase of a series of dermatoses which include pityriasis rosea and the parapsoriases (Brocq).

8. A lymphoma of the skin (Strobel and Hazen).

9. A cutaneous manifestation of a systemic disease of toxic origin (Symmers).

REPORT OF CASES

CASE 1.—W. T. H., an American, lawyer, aged 42, with unimportant family history. The patient states that he was never ill until the year 1905. During the spring of this year a swelling, which assumed the size of a walnut, appeared without apparent cause, on the right side of the neck, near the ear. Under massage the swelling is said to have broken down and discharged into the throat. About the same time other enlargements appeared on both sides of the neck. These remained for a time and disappeared without breaking down.

Seven years later (1912) the first skin lesion appeared as a smooth red spot about the size of a fingernail under the left eye. In the course of a few weeks this spot enlarged and extended to the other cheek. In the course of the following year the eruption involved the surface of the entire body with the exception of the scalp.

During the next year he consulted physicians in various cities; psoriasis, eczema and even pompholyx were some of the diagnoses made. Later the condition was diagnosed as syphilis, and several intravenous injections of salvarsan were administered without beneficial results.

The patient consulted me for the first time on Nov. 6, 1913. The examination of his skin then revealed a generalized eruption which consisted of dusky red to reddish yellow, erythematous patches of irregular shape, ranging in size from that of a twenty-five cent piece to that of the palm of the hand. The majority of these patches were of the macular type of lesion, but some of them were infiltrated and raised above the level of the normal skin. The patient complained of intense itching.

Blood smears, serum and a piece of tissue (½ by ¼ inch) from an infiltrated patch on the outer side of the thigh, were taken for examination.

Later Dr. William B. Trimble, who examined the patient with me in consultation, concurred in the diagnosis of mycosis fungoides and advised treatment with Roentgen ray.[1]

Six months later, April 4, 1916, I again saw the patient. At this time the entire surface of the body, including the scalp, hands and nails, was covered with a polymorphic eruption. There were numerous red to reddish purple plaques, generally of irregular outline, but in some areas assuming the form of circles and semicircles. The plaques composing the circular lesions consisted of smooth, hard and glistening masses elevated in places from 1 to 3 mm. above the level of the apparently normal skin. Many of the irregular shaped patches showed scaling, and some of them were covered with blebs from which oozed a grayish puslike fluid. The entire scalp presented an oozing and scaling surface. In other areas, especially about the flexures, were large, non-elevated,

1. Dr. Meyers of Hartford, with a few roentgen-ray exposures succeeded in clearing the eruption completely from the hands and face, but in spite of this good result the patient arbitrarily discontinued the treatment.

erythematous patches which showed a tendency to scaling, suggesting a dry eczema or seborrheic dermatitis. The palms, soles and the dorsal surface of the hands and feet showed scaling, together with deep fissures extending well into the nails; some of the toe nails had exfoliated. The skin over the legs was tense, of a bright red color, and pitted slightly on pressure. The lymph nodes were everywhere enlarged. A smooth swelling about the size of a small orange occupied Scarpa's triangle on the left side. The itching was intense and the patient was constantly scratching.

The patient was again seen Oct. 14, 1916, four years after the onset of the disease, and at this time he decided as a last resort to undergo roentgenotherapy.

Fig. 1 (Case 1).—True mycosic nodules in region or right clavicle. Subcutaneous lymph nodes in region of nipples and groins.

Accordingly arrangements were made with Dr. Arthur Holding for his admission to the General Memorial Hospital. His condition had grown progressively worse during the last six months. He was weak and emaciated and his mind was not clear. He coughed continuously, and expectorated large quantities of a thick, greenish purulent fluid. Because of the annoyance from the cough and itching he was unable to sleep. Roentgen-ray and physical examination revealed extensive peribronchial infiltration, thickening of the pleurae and enlarge-

ment of the mediastinal lymph nodes. The skin condition showed many characteristic features of the so-called "tumor period." Many of the erythematous patches had taken on the form of large, raised, hard, flat masses with ulcerating surfaces from which oozed a clear sticky fluid. One of these areas, situated over the right clavicle, is well shown in the accompanying photograph (Fig. 1). Large, smooth masses were distinctly palpable in the groins and axillae. Solitary nodules, ranging in size from that of a filbert to a large walnut, were scattered over the surface of the chest, back and limbs (Figs. 1 and 2). These nodules were freely movable in the subcutis and bore no relation to the infil-

Fig. 2.—Back view of Figure 1. Observe the large subcutaneous lymph node over the left elbow joint.

trated plaques in the skin. Microscopic examination showed them to be lymph nodes. Glandular swellings in the cervical region varying in size from that of a filbert to a hen's egg were suggestive of the clinical picture in Hodgkin's disease. The posterior cervical and submental nodes formed large, nonpainful, discrete masses of fairly firm consistence, and freely movable under the skin.

The patient died one month after admission to the hospital, and a necropsy was performed by Prof. James Ewing.

Fig. 3 (Case 1).—View of hands showing scaly eczematoid eruption with involvement of the nails.

Fig. 4 (Case 1).—Nest of small and large round cells in a papilla. Four mitoses are shown. A small nest is present also in the epiderm to the left. (Section taken in 1913.)

ANATOMICAL DIAGNOSIS

Skin.—Mycosis fungoides.

Right Lung.—Croupous pneumonia. Acute sero-fibrinous pleuritis.

Left Lung.—Multiple granulomatoid peribronchial foci following the distribution of the bronchi.

Spleen.—Chronic passive congestion.

There was complete consolidation of the right lung. Near the hylus of the lung in the upper lobe the cut ends of the bronchi and of the pulmonary vessels were slightly thickened and cream colored. In several places the parenchyma in the immediate neighborhood of the thickened bronchi was rather firm in consistence and presented a grayish or somewhat cream colored, rather smooth appearance, suggesting granulomatous foci. Similar firm, cream colored,

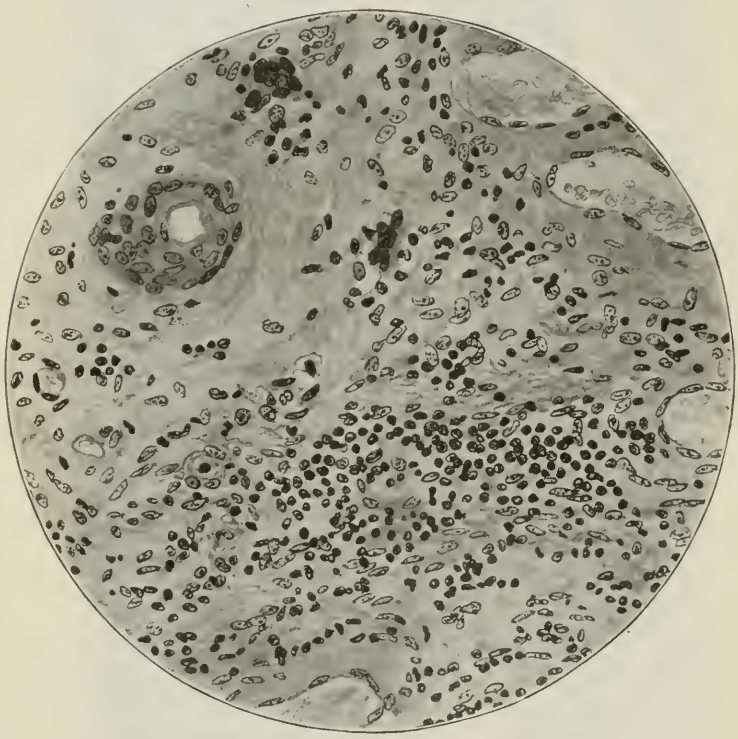

Fig. 5 (Case 1).—Section of corium taken in 1917, showing lymphocytes, plasma cells, and numerous irregularly arranged cells of the so-called "endothelioid" type. Two bunches of nuclei simulating chorioplaques are shown. The collagen is hyaline and the capillaries are dilated.

dense areas were present in corresponding situations in the left lung. Peribronchial lymph nodes were numerous. Some were discrete and some were bunched together by dense adhesions of their capsules. They varied in size from that of a filbert to that of a walnut. On section, the nodes presented a firm surface which varied in color from a grayish red to dull white. In one or two of them were yellowish spots which were not friable but as firm in consistence as the rest of the node.

The retroperitoneal lymph nodes on the left side of the spinal column were enlarged, brownish red in color and of firm consistence. They numbered

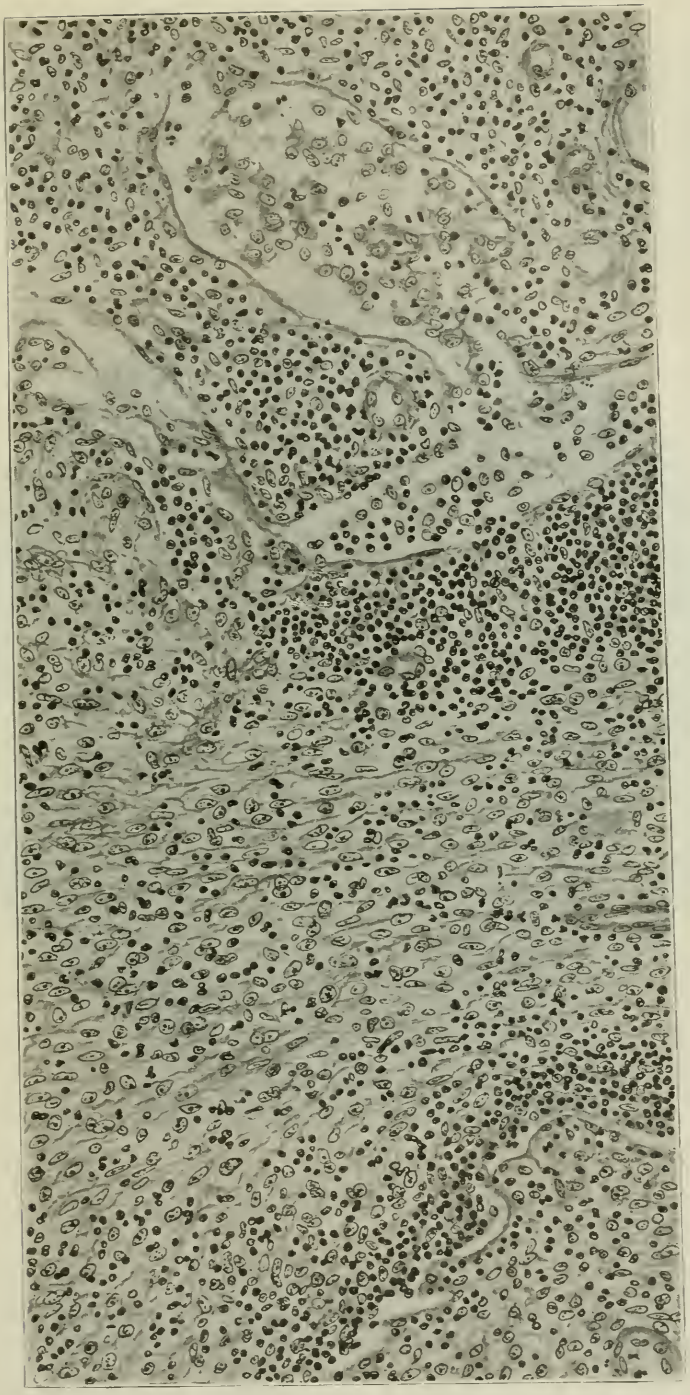

Fig. 6 (Case 1).—Section of subcutaneous lymph node showing sinuses, being filled (top) and finally obliterated (lower right corner) by proliferation of reticular cells. The lymphocytes of the cords are being replaced by plasma cells (periphery) and later by large reticular cells (center).

twenty to thirty, the largest being cigar shaped and measuring about 5 cm. in length and 1 cm. in thickness. The others were rounded or oval. The cut surface of the lymph nodes with the exception of some sharply defined, cream colored or yellowish areas, was smooth and glistening. The nodes removed from the left groin were oval, about the size of a hen's egg, hard, grayish white in color, and in places finely nodular or lobulated. The sections presented the same naked eye appearance as those described above. The lesions found in the other organs were unimportant.

Fig. 7 (Case 1).—Biopsy section from one of nodes under right nipple (Fig. 1).

HISTOLOGY

Sections from the skin plaque referred to above, removed September, 1913, show the following histologic features:

Corium.—The changes are confined to the upper third of the corium. The chief features are the proliferation of light staining oval cells (connective tissue cells), the presence around the vessels and hair follicles of small lymphocytes and larger round cells with large hyperchromatic nuclei, and occasionally in the tops of the papillae a nest of these round cells with large hyperchromatic nuclei which are frequently in mitosis. These nests occupy the upper parts of the papillae and encroach on the epiderm (Fig. 4). Occasionally they are present in the malpighian layer.

The skin section represented in Figure 5 was removed at necropsy. The exudate is also distributed throughout the upper third of the corium and the papillae, and is more abundant around the blood vessels, the sweat ducts and the hair follicles. The cells represented are lymphocytes, plasma cells, fibroblasts and adult connective tissue cells.

The collagen fibers of the stratum papillare appear to be fused together and hyalinized; those in the recticular are thickened and greatly increased in number. The blood capillaries in the papillae are considerably dilated; in the recticular they show marked proliferation of endothelium, and in places new capillaries are developed in compact bunches, forming capillary "hemangiomas" which extend down into the subcutaneum.

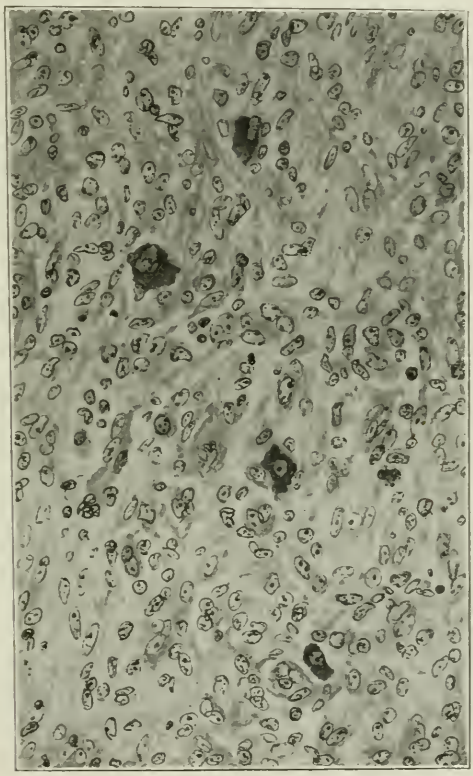

Fig. 8 (Case 1).—Section from same lymph node as Figure 7, showing large cells with homogeneous acidophilic cytoplasm.

Epiderm.—There is acanthosis. Here and there are found small "cell nests" of the character noted in the biopsy section. The corneous layer shows slight hyperkeratosis and in places marked parakeratosis with the formation of "Munro's abscesses."

Lungs.—Sections from the granulomatous areas of the lung show a cellular infiltration composed principally of plasma cells, and which is most dense in and around the walls of the bronchi and blood vessels. Farther out from the bronchioles the wandering cells are fewer and intermixed with numerous fibroblasts. Some of the alveoli are collapsed, some are distended with large, desquamated,

fat-containing epithelial cells and others are filled with fibrin which is undergoing organization (Figs. 11 and 12).

Sections from the consolidated areas show alveoli filled with leukocytes and fibrin.

Lymph Nodes.—All examined show pathologic changes. The architecture is mostly obliterated. In the smaller nodes the lymphocytes are extensively replaced by large plasma cells, and, in places, by collections of eosinophils. Here and there are seen cells of a larger type with a comparatively small rim of clear cytoplasm and a large, rather deeply staining nucleus, which is frequently slightly indented.

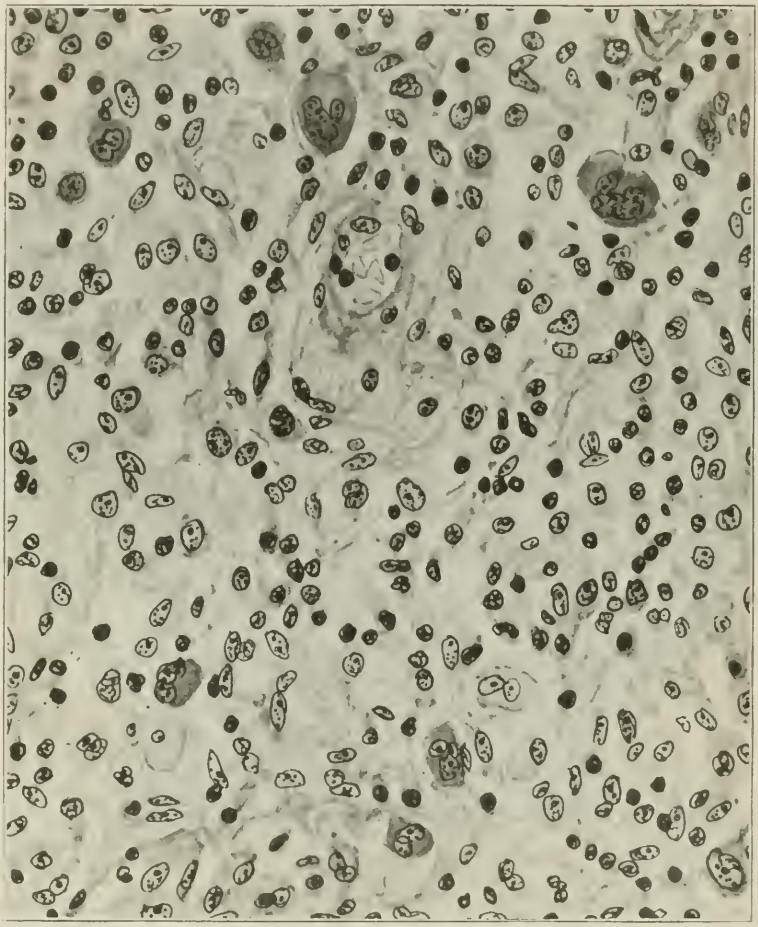

Fig. 9 (Case 1).—Necropsy section of large inguinal lymph node.

In the larger nodes and in the subcutaneous nodes obtained by biopsy, the plasma cells are replaced by extensive areas composed of cells of the size and character of the so-called "endothelioid" cells seen in the nodes of Hodgkin's disease. Some of these cells have elongated vesicular nuclei, and their cytoplasm is strung out into processes which are continuous with the reticulum of the node. In the meshes of the reticulum are numerous large cells with large rounded nuclei showing a varying amount and arrangement of chromatic granules. The cyto-

plasm is sometimes fairly densely but most frequently sparsely granular. The nuclei are frequently in mitosis and occasionally multilobed or multiple. Here and there among these cells are a few others of the same size which closely resemble plasma cells. Indeed, in places it appears possible to trace a transition between the plasma cells and the larger cells just described. This is more forcibly brought out by staining with toluidin blue, in which case the cytoplasmic granules of the plasma cells and of many of these large cells take the same metachromatic stain, namely, a reddish purple. Eosinophils are sparsely scattered throughout the tissue, but in places they appear in fairly dense collections. The picture on the whole, thus simulates closely that of Hodgkin's disease.

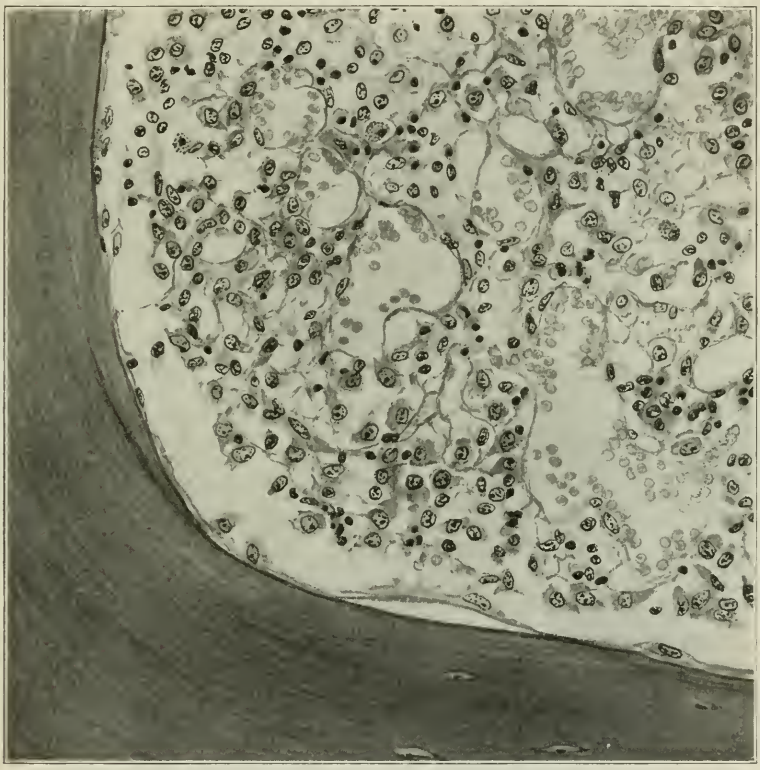

Fig. 10 (Case 1).—Section of vertebra.

All of the larger cells, including the multinucleated giant cells, when treated with alphanaphthol and dimethyl-paraphenylendiamin give a negative oxydase reaction, which fact lends support to the view that they do not belong to the granular series of bone marrow cells.

A striking feature is the presence of mononuclear or binuclear cells with a large irregularly shaped cell body and eosinophilic, nongranular, homogeneous cytoplasm. These cells do not give the oxydase reaction and hence are not true eosinophils. The nucleus resembles that of the plasma cell.

Vertebrae.—The medullary spaces are distended with cells. Here and there, however, groups of spaces are filled with a delicate myxomatous-like connective tissue in which few cells, chiefly lymphocytes, are present. Other cellular areas are composed chiefly of myelocytes, a fact which is proved by a positive oxydase

reaction. Scattered among these are a few lympocytes and an occasional plasma cell. Frequently the lymphocytes appear in isolated colonies of variable size. The number of red cells, polymorphonuclear leukocytes, eosinophils and basophils in relation to one another is about normal, but very small in proportion to the number of the myelocytes and lymphocytes. The blood capillaries have delicate walls, are widely dilated and filled with red cells. Here and there small areas of hemorrhage occur.

Spleen.—In many of the splenic nodules the reticulum is markedly increased, and the lymphocytes diminished and partly replaced by plasma cells, among which are sparsely scattered, large mononuclear and sometimes binuclear cells with irregularly shaped, hyalinized, slightly eosinophilic and sometimes basophilic

Fig. 11 (Case 1).—Section of a bronchial wall in a granulomatous area. (Low power.)

cytoplasm, corresponding to the cells of similar character already described in connection with the lymph nodes. Groups of plasma cells are found around the trabeculæ and smaller branches of the arteries. A few plasma cells, either sparsely scattered or in small groups, are also seen in the pulp.

Blood Vessels.—The capillaries are mostly dilated and there is cellular infiltration of the adventitial sheath of the arterioles. Sometimes there is moderate proliferation of the capillary endothelium, and occasionally in the older lesions slight hyalinization of the walls. No destructive or sclerotic changes comparable to those characteristic of syphilis or tuberculosis are present.

We have for consideration, therefore, a case which, neither in its mode of onset nor early development, presented any symptoms which might have suggested a diagnosis other than that of a straightforward premycosis, but which finally presented clinical and pathologic features indicative of Hodgkin's disease.

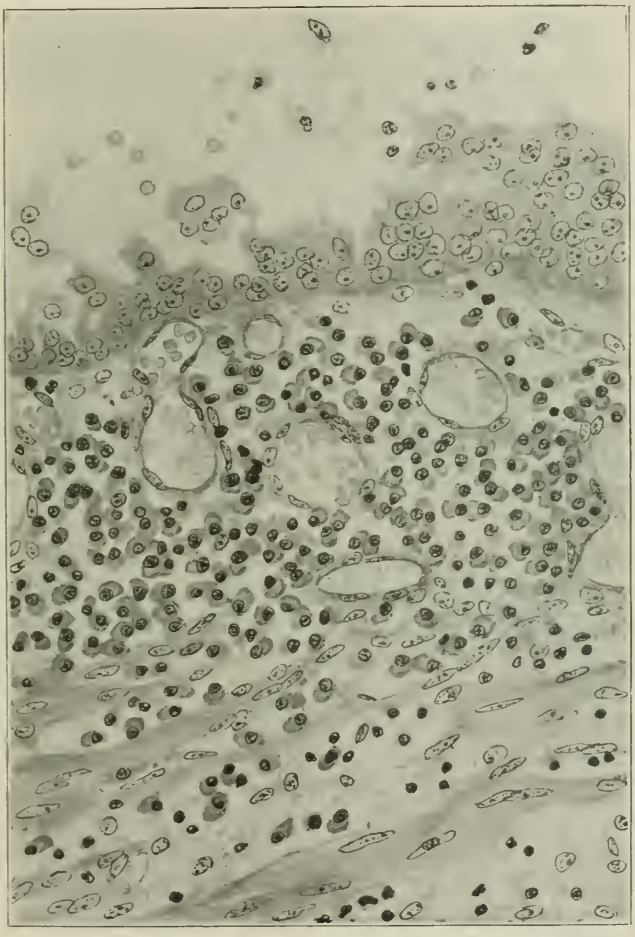

Fig. 12 (Case 1).—High power view of Figure 11 showing cellular exudate to be composed principally of plasma cells.

Galloway,[2] with considerable experience, refers to two cutaneous manifestations, which he has occasionally observed in Hodgkin's disease, viz: (1) a generalized dermatitis associated with the appearance

2. Galloway's description of these "nodules" is vague but in all probability he means subcutaneous lymph nodes.

of pruriginous points and macules, pigmentation, lichenification, and frequently pruritis of intense degree. (2) Papules and nodules with histologic features identical with the characteristic lymph nodes lesions of the disease. He finds a similar analogy in the case of the leukemias, but Whitfield on the other hand claims that this analogy is only a superficial one, and draws attention to the fact that in Hodgkin's disease and the leukemias the prodromal and tumor eruptions are fundamentally different histologically, that in these diseases the tumor eruption is not apparently a development of the prodromal eruption, whereas the tumors of mycosis fungoides are an actual overgrowth, that is to say, an exaggeration of the premycotic eruption.

Paltauf at first believed that mycosis fungoides was a form of lymphosarcoma, but later strongly advocated the "granuloma theory," that it (mycosis fungoides) has no relation to Hodgkin's disease or to sarcoma as claimed by Radaeli, or with the leukemias or lymphoma as claimed by Pardee and Zeit, and Strobel and Hazen. Paltauf says:

> In mycosis fungoides we have a primary disease of the skin, extending over a course of years with continual progress, and a tendency to degenerative changes, complete necrosis and ulceration. In "lymphogranuloma" we have the disease localized in the skin, and a dry necrosis similar to caseation, without ulceration. In "lymphgranuloma" the skin lesions are urticarial or prurigo-like, while in mycosis fungoides, we find either eczematoid or psoriatic lesions most delicately reddened, and sharply circumscribed or serpiginous erythematous areas. It does not remind one of urticaria.

Both Paltauf and Whitfield also emphasize the point that the leukemias are essentially different from mycosis fungoides in that the leukemic processes always remain a proliferation of lymphocytes; while the lesions in mycosis fungoides eventually may resemble "granulation tissue."

In regard to the case under consideration (Case 1), the onset was clearly that of mycosis fungoides, the history and clinical features during the first three years of its course constituted a straightforward picture of mycosis fungoides, and there was no suggestion of a resemblance to any other known disease. It has been shown that the nodules which developed under the skin in the last stage of the disease had no connection whatever with the premycosic eruption, and that the skin over these nodules presented a normal anatomic picture. They were not, therefore, true mycosic tumors, and as already stated, the microscopic examination proved them to be lymph nodes in which the normal architecture was completely replaced by a cellular infiltration which bears a striking resemblance to that found in the lymph nodes of Hodgkin's disease. There were, however, true mycosic tumors in the skin and indeed all the skin lesions throughout the whole history of the case were from the clinical aspect mycosic and not in any way like

the urticarial or prurigo-like dermatoses claimed by Paltauf and others to be associated with Hodgkin's disease. So, too, from the histologic standpoint the structure of the skin tumors is simply a further development of the pathologic process seen in the earlier premycosic lesions — the feature claimed by Whitfield to be characteristic of mycosis fungoides in distinction from Hodgkin's disease, in which the tumors and earlier dermatoses are fundamentally different histologically.

These facts exclude the interpretation of the case as one of Hodgkin's disease with "pseudomycosic" skin manifestations, and it would seem that we are left with the following alternatives:

1. We are dealing with a case in which Hodgkin's disease and mycosis fungoides coexist as independent diseases.

2. Hodgkin's disease and mycosis fungoides are different manifestations of one and the same disease.

3. Hodgkin's disease and mycosis fungoides are different diseases, but are caused by agents which can under certain conditions stimulate the tissues to very similar reactions.

It seems that there is not sufficient difference between the histology of the skin lesions and that of the lesions in the lymph nodes to justify the acceptance of the first. Though the former do not show what may be termed characteristic histologic features of Hodgkin's disease as do some of the latter, yet in many respects the character of the cells found in them (even in the earliest lesion studied, Fig. 4) is more suggestive of this disease than of any other type or group of lesions. Furthermore, when the skin lesions are carefully compared with the many affected nodes which are less characteristic of Hodgkin's disease, it becomes evident that all the changes, in both skin and lymph nodes, are parts of one and the same pathologic reaction.

In regard to the second and third alternatives it may be said that no definite histologic facts have been established in the study of the case which aid us in making a choice between them, unless it be the comparatively few areas in the affected lymph nodes that show features distinctly characteristic of Hodgkin's disease, which fact might incline us to favor the third. On the clinical side, too, the facts for the most part strongly favor the third, but in view of the already recognized wide variations in the history and course of Hodgkin's disease, it is probably better for the present at least not to give too much weight to this aspect of the case.

Case 2.—The patient, a woman, occupation, school teacher, was born in 1855, and always lived in the United States. There is nothing of special interest in the personal or family history. On admission the physical examination revealed nothing noteworthy in the heart, lungs, or other organs, except marked inguinal

adenopathy. One of the enlarged inguinal nodes was removed for examination (February, 1915).[3]

Commencing thirteen years ago and continuing for three or more years, the patient complained of itching of the body when undressing at night, especially severe between the shoulders and at the backs of the knees. Scratching produced whitish elevations (wheals) which subsided in a few hours. Two or three years later, two dry "spots," elevated at the center, less so at the periphery, appeared; one on the outer aspect of the right thigh (3 by 1½ inches in size), and one on the inner side of the right elbow. They were scaly, and their color was that of the normal skin. They did not become red or break down, and gradually disappeared after two years. Pruritis then developed on several areas of appar-

Fig. 13 (Case 2).—Section of skin showing distribution of cellular exudate. (Low power.)

ently normal skin, followed in a few days by elevations similar to those just described. These were of different sizes and were scattered over the body, to the number of twenty or thirty, each faintly red, slightly elevated, more or

3. I wish to express my thanks to Drs. Whitehouse and Aitken for the privilege of studying this case, which occurred in their service at the New York Skin and Cancer Hospital; to Dr. Crawford, their house surgeon, for furnishing the history of the case and pathologic material obtained by biopsy, and to Dr. Jessup, who performed the necropsy, for furnishing material for study.

less rounded with increasing scaliness and accompanied by intense itching. The patches did not break down or ulcerate. This condition lasted for several years, some of the lesions spreading and becoming redder, and a few coalescing. Finally one large plaque appeared on the right side of the neck which was redder in color than the previous lesions. Other patches then appeared on the back and later over the rest of the integument, which were larger, redder and smoother, and not so scaly as the previous ones, but just as intensely itchy. Lesions did not appear on the face until two years ago.

She sought medical aid two years ago. At that time, especially during warm weather, the lesions oozed a clear, sticky fluid of very disagreeable odor which on drying formed crusts. The average size of the lesions varied from that of a five cent piece to that of the palm of the hand, and were in color usually a

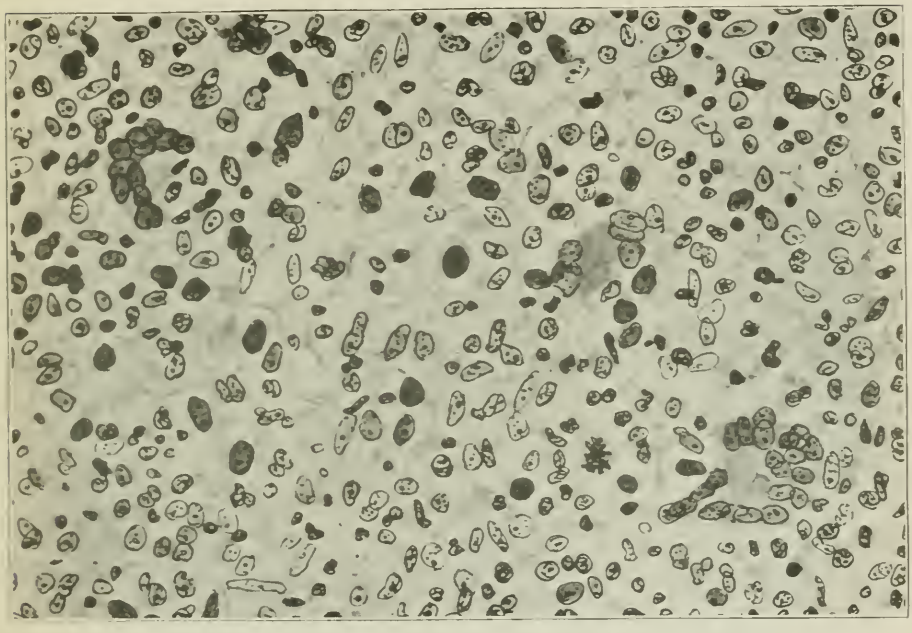

Fig. 14 (Case 2).—High power of Figure 13. Note mitotic figure at left of giant cell in lower right corner.

dark shade of red. One or two years ago a few lesions which later broke down appeared on the toes, right leg and left thigh. Some of the lesions on the buttock and back ulcerated in a circinate form.

The patient died and a necropsy was performed by Dr. S. Jessup shortly after death. The skin of the entire body was brownish in color, and that of the anterior aspect of the chest presented a large, slightly elevated and indurated, irregularly outlined scaly, silvery patch. The hair of the head was scanty and short; the features were of the masculine type, and there was a noticeable stubby moustache and a growth of hair on the chin. The inguinal and axillary nodes were enlarged, discrete and firm in consistence. The examination revealed nothing worthy of note other than marked hyperplasia of both suprarenal capsules and enlargement of the axillary, peribronchial, retroperitoneal and inguinal nodes, which varied in size from 1 to 5 cm. in diameter. The nodes were discrete and firm. Many of them were almost completely replaced by dense scar tissue.

HISTOLOGY

(Section taken from an indurated raised plaque on arm.) (Figs. 13, 14.)

Corium.—There is edema of the papillae and upper layers of the corium. The papillae contain a few plasma cells, and an increased number of connective tissue cells, among which are a few chromatophores bearing a yellowish brown pigment, and a few mast cells. Beneath this are large areas, taking up the remaining portion of the upper one fourth of the corium, which are densely infiltrated with round cells of varying size and shape. The majority of them have large, round or irregularly shaped nuclei with rather dense homogeneous chromatin. These nuclei frequently show mitotic figures. Scattered among these cells are numerous small, round, deeply staining nuclei, and also a few oval vesicular ones about the size of that of the ordinary connective tissue cell, which are set in an edematous, irregularly pinkish staining background which probably represents a fused mass of cytoplasm and changed collagen fibers. An occasional plasma cell and eosinophil can be seen. There are a few multinucleated giant cells with a hazy, pinkish cytoplasm and numerous heaped-up, oval nuclei. Occasionally the cytoplasm belonging to the larger nuclei is distinct, and appears as a small crescent-shaped rim at one side of the nucleus simulating the larger type of lymphocyte. All of these cells, with the exception of the eosinophils, which are few, small and multinucleated, give a negative oxydase reaction.

Epidermis.—There are very few changes worthy of note. There is slight intracellular and intercellular edema in places. A few leukocytes are scattered throughout the intercellular lymph spaces. Some of the interpapillary pegs show acanthosis. In these, numerous mitotic figures are seen near the basal layer.

Lymph Nodes.—Sections from the nodes removed at necropsy show large patches of hyalinized fibrous tissue enclosing here and there cellular islands of various sizes. In some of these islands, the plasma cells predominate, in others there are lymphocytes, eosinophils and large cells similar to those described in the lymph nodes of Case 1.

Examination of the lungs, spleen, liver and other internal organs revealed no changes worthy of note.

The pathologic features in this case which are suggestive of Hodgkin's disease are, in contradistinction from the findings in Case 1, more characteristic in the skin lesions than in the lymph nodes, and just how suggestive these features are is well demonstrated in the skin section represented by Figure 5. The giant cells represented here are not, as were those in the lymph nodes in Case 1, of the type usually seen in Hodgkin's disease; yet frequently the cells show an incomplete amitosis or "lobing" of the nuclei, which might well be interpreted as an attempt at the formation of the Hodgkin's giant cell. In all other respects the picture may easily be interpreted as the representation of a Hodgkin's lesion.

An unusual clinical feature in this case is the mode of onset with pruritis, from which the patient suffered for three years without any change in the skin. Dr. Sequeira refers to this mode of onset, and speaks of a case occurring in his experience where the tumors developed immediately after a long period of itching, skipping as it were the so-called premycosic stage.

Case 3.—C. C. C., of Johnson City, Tenn. The family and previous history are unimportant. The present trouble began in the summer of 1908 with the appearance of reddish-brown, nonelevated macular patches about the size of a thumb nail on the surface of the skin over the waist line. In the course of a month these spots disappeared spontaneously. In the spring of the following year (1909) similar but more extensive lesions developed on the site of the original spots. At this time the patient consulted a physician, who prescribed local treatment, and the eruption disappeared, with the exception of a few faint areas which the patient states did not bother him.

During the following year there was no return of the eruption, and the patient enjoyed good health. But in the spring of 1911 the lesions reappeared

Fig. 15 (Case 3).—Section from a tumor growth. Observe distribution and depth of cellular infiltrate. (Low power.)

over the chest, limbs and in one or two places on the forehead. In July, the patient visited New York and consulted a physician who diagnosed the disease psoriasis. Under a three months' course of treatment the lesions, especially those on the face, seemed to grow worse.

In the fall of 1911, the patient visited the Hot Springs of North Carolina, where he remained two weeks receiving an arsenical treatment and daily baths, under the supervision of a local physician. As there was no improvement he returned home and placed himself under the care of another physician, who

prescribed certain internal remedies and a lotion for external use. He continued this treatment for a period of nearly three months, during which time the eruption on the body completely disappeared, but continued to grow worse on the face. The eruption on the body, however, soon returned, and during the fall of 1911 the patient observed that the lesions were taking on a scaly appearance. Itching began to develop about this time, but this symptom did not become severe until one year ago (1916).

In February, 1913, the patient returned to New York, where he consulted a dermatologist who diagnosed the disease eczema, and treated it for four months without benefit.

There was no evidence of tumor formation until 1913. In June of this year a swelling appeared on the right temple. The growth was rapid and at the

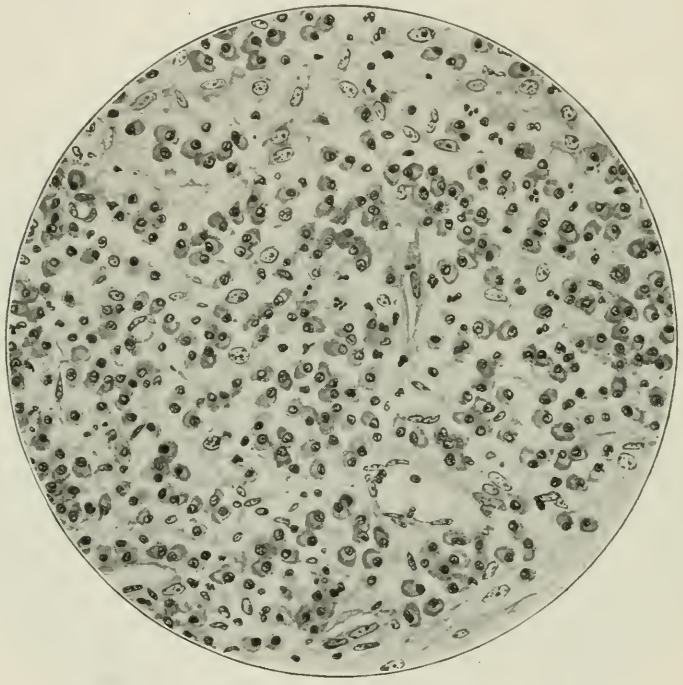

Fig. 16 (Case 3).—High power of Figure 15, showing infiltrate to be composed almost entirely of plasma cells.

end of four months covered an area 4 by 5 inches, and projected from ½ to ¾ inch above the surface of the surrounding skin. At the end of the fourth month the tumor presented an ulcerated surface which discharged a yellowish sticky fluid. A similar growth about the size of a walnut developed at the same time on the back of the neck.

The patient now visited the Arsenic Springs in North Carolina where he remained for two months without receiving any benefit. He returned to New York in December, 1913, and consulted Dr. George W. Crary, who diagnosed the lesion to be mycosis fungoides, and referred him to the General Memorial Hospital, which he entered in January, 1914. The tumors on the forehead and neck were removed surgically. The areas on the neck and lip were treated with radium, while the remaining lesions were treated with roentgen ray. Skin grafting was done two weeks after the surgical removal of the growth on the temple. At the end of four months' treatment in the hospital (April, 1914)

the wound on the temple was healed, all the skin lesions had disappeared, and the patient returned to his home. Two months later, however, new tumor formations developed rapidly on the arm and other places.

The patient returned to New York in September, 1914. He remained two months, during which time he received roentgen-ray and radium treatment from Dr. Arthur Holding and Dr. W. W. Bosworth. He again returned home, free from all symptoms or signs of disease.

During the year 1915 he again suffered from several relapses which were characterized by the appearance of erythematous patches in various situations that had not progressed to the stage of tumor formation. During the year the patient returned three times to New York at intervals of four months, and each time the lesions yielded completely to roentgenotherapy.

During the last year (1916) itching, which was almost absent in the early period of the disease, became severe, and the scalp, heretofore not affected, became covered with a scaly eruption. The itching was completely relieved by treatment with sublimed sulphur.

While visiting in Bronxville, N. Y. (May, 1916), the patient was attacked suddenly with an acute illness which resulted in his being confined to bed for a period of four months. Dr. H. R. Charlton, who attended him during this illness, diagnosed the condition streptococcus septicemia. It was characterized by multiple abscesses and areas of suppurative periostitis, a leukocytosis varying from 15,000 to 20,000, polynuclears 80 to 90 per cent., evidence of nephritis, and finally a lesion of the mitral valve. This attack was considered by Dr. Charlton an accidental infection, quite independent of the mycosis fungoides. It is a remarkable fact that during this illness all trace of the skin lesions disappeared, but as recovery progressed the lesions began to reappear and the itching became more severe than ever. The patient also observed that the eruption had changed. It now appeared mostly on the back and limbs as a diffuse rash instead of the individual raised, infiltrated plaques which characterized the former outbreaks and which are so characteristic of this disease. The patient was very emphatic in his statement to me that the application of dry sulphur caused the disappearance of this eruption, and complete relief from the itching.

At the time of examination (March, 1917) the patient's skin was clear with the exception of two small areas on the chin and penis, respectively, and some fine scaling of the skin of the eyelids. Scars which resulted from the radium treatment and a granulating area where the skin graft broke down are apparent. In one part of this surface the external table of the skull is exposed.

HISTOLOGY

(Section from a tumor growth on the temple.) (Figs. 15, 16.)

Corium.—The whole of the corium is infiltrated with dense masses of round cells which extend in cuff-like accumulations along the vessels and sweat ducts down to the subcutaneum. The infiltration is less dense in the papillary layer.

Differential stains such as toluidin blue show that the majority of the cells are plasma cells; the others are lymphocytes with here and there a few eosinophils. Polymorphonuclears are sparsely scattered throughout the corium both within and without the cellular foci. The plasma cells in places show a marked tendency to fragmentation of the cytoplasm and to crenation of the nuclei. This feature makes it difficult to determine their true nature with the ordinary stains.

The vessels are markedly dilated and there is considerable edema of the connective tissue, especially in the papillae and in the papillary layer. There is considerable hyperplasia of the connective tissue surrounding the foci of cellular infiltrate, fibroblasts in some places being quite numerous.

Epidermis.—The epidermis is thin immediately over the papillae and the interpapillary pegs are lengthened. In places there is moderate intracellular edema.

Corneum.—The corneous layer shows parakeratoses, vesicles filled with blood and serum and masses of necrotic leukocytes (so-called Monroe's abscesses).

The tumor growths in this case were characteristic, having arisen rapidly at the end of a five year premycosic period, finally breaking down and presenting an ulcerated surface. This feature would make the case, from a clinical point of view, the most typical in the series, but the pathologic histology does not show the multiformity of cell morphology present in the two cases previously described, and which is the picture most frequently found in mycosis fungoides. We may say, in this case, that the presence of plasma cells, lymphocytes and eosinophils indicates a subacute or chronic inflammatory process of the common type.

Another interesting feature of this case is the complete abeyance in which the disease has been held by the use of roentgen treatments. I have not seen the patient since March, 1917, but at that time, as stated above, he was practically free from evidence of the malady.

CASE 4.—T. R., a man, aged 70, was born in Ireland and came to America at the age of 25.

Family History.—His father died at the age of 66; his mother is still living, aged 90; his grandmother on the mother's side died at the age of 104; he has three brothers and three sisters in good health.

Previous History.—The patient always enjoyed good health. He gives a history of having had a ring-worm on the arm at the age of 17.

Present History.—The present trouble began four years ago (summer of 1912). The patient's attention was first directed to what he describes as "rough" and "scaling" patches on the sides of the chest and back. Four months later these patches became red and itchy, but the itching did not become very annoying until about a year later.

The patient presented himself for the first time at Dr. Trimble's clinic in August, 1913. An examination revealed the presence of variously sized erythemato-squamous patches involving the entire skin surface, excepting that of the hands, forearms and face, which were free. Some of the areas were slightly infiltrated. The skin of the chest, abdomen and part of the back was of a bright red color which gave to the patient the characteristic "homme rouge" appearance.

At present the skin presents the type of lesion which the textbooks describe as belonging to the intermediary, secondary or infiltrated stage. They include many of the raised, pad-like infiltrated, persistent, erythematous patches, which are regarded by many authorities as being pathognomonic of the disease. These lesions range in size from that of a ten cent piece to several inches in extent, and are smooth and glistening or covered with fine scales. They are usually distinctly raised above the level of the apparently normal skin. In shape they are round or oval, discoid or crescentic, and one situated on the right chest represents a complete circle.

The palpable lymph nodes are slightly enlarged. The blood picture shows nothing abnormal. Repeated Wassermann tests were negative. The serum also fails to bind complement in the presence of an antigen made from mycosic tissue.

HISTOLOGY

(Section of skin from an early "plaque.")

Corium.—The upper third (papillae and papillary layer) is densely infiltrated with small cells varying in size from that of a lymphocyte to that of an ordi-

nary connective tissue cell. The cell bodies are indistinct, the cytoplasm of the different cells apparently being fused into a homogeneous, faintly staining mass in which the nuclei are embedded. The nuclei seen are of two types: (1) oval or rounded, of homogeneous structure and faintly staining. By comparison with cells in the normal corium it is evident that these are connective tissue cell nuclei which are greatly increased in number; (2) deeply staining irregularly shaped crenated and pyknotic nuclei about the size of the nucleus of the small lymphocyte. Here and there, what is evidently a similar cell appears with a round nucleus and small rim of cytoplasm. These cells (Type 2) evidently belong to the lymphocytic series, and they constitute by far the greater part of the infiltrate. Here and there a few plasma cells and occasionally an

Fig. 17 (Case 4).—Section from a circular lesion of skin. Note dense infiltration of lymphocytes extending to tops of papillae and invading the epiderm. Marked parakeratosis with vesicles in corneum. Acanthosis.

eosinophil can be seen among them. No mitoses are present. The collagen fibers are so changed by the edema that their outline cannot be seen. The papillary vessels are moderately dilated.

Epiderm. — The cellular infiltrate extends from the papillae into the epiderm, in places practically destroying and replacing the pegs, occasionally up to the corneous layer. In the neighborhood of the infiltrate there is intercellular and intracellular edema, the epithelial cells showing the same faintly staining appearance as the connective tissue cells of the corium.

Sections taken from a later elevated and circular lesion present a similar histologic picture except for perivascular extensions to the subcutaneum. The distribution is the same as in the early lesion. The changes in the epiderm also are the same as in the early sections except that the corneous layer shows marked parakeratosis and numerous vesicles filled with a homogeneous hyaline substance containing leukocytes and cellular debris (Fig. 17).

The skin only was examined histologically, since removal of the lymph nodes for examination was deemed inadvisable.

The histologic features of the lesions in this case, it will be noted, differ considerably from those in the three cases previously described, but since, as

Fig. 18 (Case 5).—Section from an area of apparently normal skin.

will be seen, they are practically the same as those in the two cases which follow, a discussion of these differences will be reserved until later.

A remarkable feature in this case is the rapid manner in which the infiltrated lesions spring up and remain for a few days and then disappear without leaving the slightest trace of their former presence. To illustrate, I had selected a beautiful sample of a complete elevated ring as a fine lesion to show the members of a local society, but when the time for presentation arrived, less than a week later, the lesion was

not there. In the meanwhile, however, another of the same type had arisen in another situation.

A second remarkable feature is in reference to the family history. It has already been noted that this patient comes from a family of long-lived parents. Dr. Pernet of London was the first to make the observation that many of the cases of mycosis fungoides had a similar history. This observation, however, does not seem to accord with the experience of other observers.

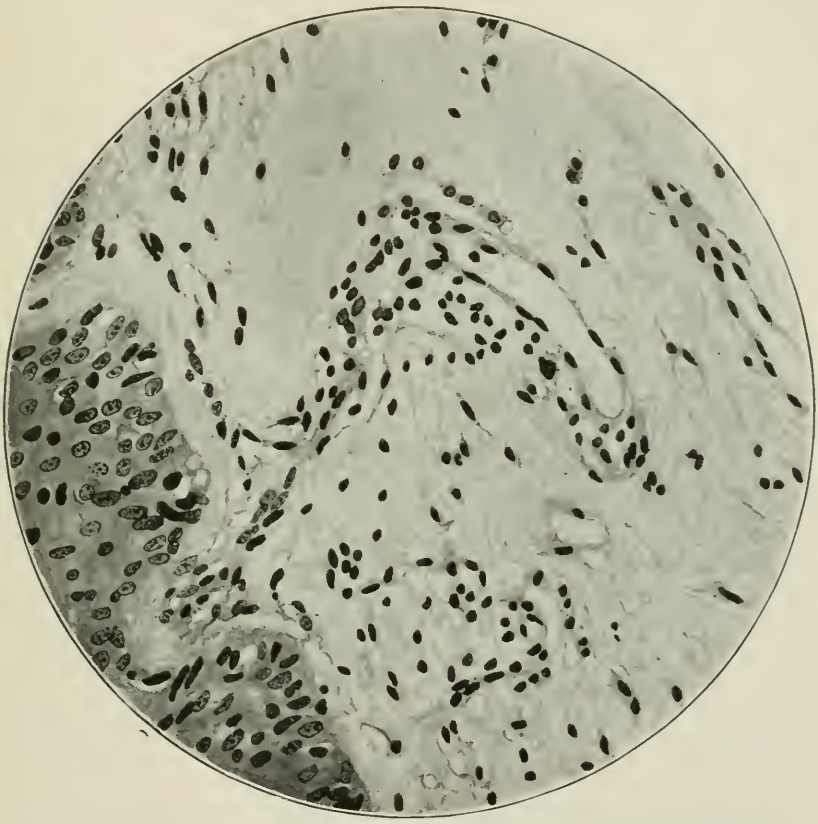

Fig. 19 (Case 5).—Section from an "erythematous" lesion of skin.

And lastly, in regard to the treatment of this case, it is worthy of note that intravenous injections of an arsenical preparation suggested by Dr. Trimble, afforded prompt, efficient and what now seems to be permanent relief from the pruritis.

Case 5.—The patient,[4] M. B., is a man, aged 45, of Russian birth; occupation, farmer. The family history is negative. The eruption first appeared as dark

4. I am indebted for the privilege of studying the fifth case to Dr. Kingsbury, in whose service it occurred, at the New York Skin and Cancer Hospital.

yellowish areas on the legs and arms eight years ago. Six years ago (the time of his coming to America) these areas grew larger and spread to the trunk. In the last two years the greater part of the body surface became red and covered with infiltrated plaques. Itching, which has been especially severe of late, did not begin until five years ago. The Wassermann reaction was negative. Blood count normal.

HISTOLOGY

A section taken from an area of apparently normal skin shows the following microscopic features: Moderate edema of the upper one-fourth of the corium; a mild and orderly increase of the connective tissue cells; a very mild infiltra-

Fig. 20 (Case 5).—Section from an infiltrated plaque. Note the similarity between this and Figure 17.

tion of lymphocytes in the perivascular sheaths, and for some distance therefrom. The nuclei of the lymphocytes are deeply chromatic and occasionally slightly larger than normal. The epiderm shows no changes worthy of note (Fig. 18).

A section taken from an erythematous but nonindurated area shows a greater amount of edema than that found in the section from apparently normal skin. The lymphocytic infiltration is more marked, and in places invades the epiderm well up into the malpighian layer. The epiderm shows moderate edema, chiefly intracellular (Fig. 19).

The section of a raised plaque shows a dense lymphocytic infiltration of the upper one fourth of the corium, being more dense around the vessels and in the papillae. A few eosinophils and plasma cells are scattered here and there through the infiltration. The connective tissue cell nuclei and the endothelium of the capillaries are moderately increased in number. The lymphocytic nuclei are deeply chromatic and the most of them are crenated. Here and there a lymphocyte of a larger type is seen. There is a moderate number of mitotic figures, but it is difficult to say what cells are dividing; sometimes it appears to be the connective tissue cells, and at other times the large lymphocytes. The lymphocytic infiltration has spread in places from the upper corium and papillæ into the malpighian layer of the epiderm. There is moderate acanthosis, hyperkeratosis and parakeratosis.

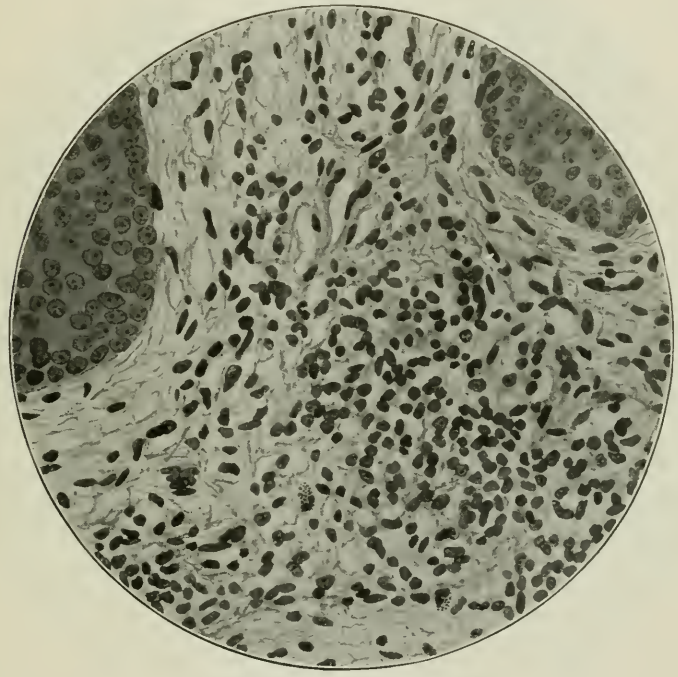

Fig. 21 (Case 5).—High power view of Figure 20. Two eosinophils are shown at bottom.

Case 6.—There is nothing special to note in the clinical features of this case. The patient is a man of middle age, and is still under observation in the service of Dr. Trimble at the New York Skin and Cancer Hospital.

The histologic features of the lesion are interesting in that they may be interpreted possibly as representing a transitional stage between the type of lesions in Cases 4 and 5 and that in Cases 1 and 2. The character of the cellular infiltration and its distribution are generally the same as in Cases 4 and 5, but not frequently the cell nuclei show disproportionate enlargement, with hyperchromatism, mitotic figures, and a tendency to the formation of lobes by incomplete amitotic divi-

sion — features which, we have seen, constitute some of the chief characteristics of the histology in Cases 1 and 2.

In all these cases (4, 5 and 6) the exudate appears to be more dense in the upper corium and papillae than in Cases 1, 2 and 3, in places spreading through the papillae diffusely and then invading the epiderm. While there is some invasion of the papillae in Case 1 the cells appear in localized foci or nests, and not as diffuse infiltration.

Fig. 22 (Case 7).—Section from erythematous lesion of skin. Picture is the same as that of erythematous areas in Case 5.

CASE 7.—This case was presented by Drs. MacKee and Wise at a meeting of the New York Academy of Medicine, Dermatological Section, October, 1916. The majority of the members present agreed that clinically it should be considered a clear cut case of mycosis fungoides. Dr. Fox suggested, on account of the jagged appearance of some of the lesions, its resemblance to lichen acuminatus. The histologic picture was reported as "indefinite."

The following notes are from the history record of the New York Skin and Cancer Hospital:

Mrs. L. W., widow, aged 58. Duration of dermatosis seven years. The first lesions were dark spots, slightly larger than a silver dollar, on the feet

and legs. These spots gradually grew larger. Two years ago lesions appeared on the trunk, and on the arms ten months ago. The lesions are reddish brown, and at times assume a fiery red appearance. They are moderately indurated and in places covered with scales, scaling being especially prominent on the scalp. There are no elevated plaques. Blood findings are normal.

HISTOLOGY

Section of a skin punch shows essentially the same histologic picture as the section taken from the noninfiltrated, erythematous area in Case 5, namely, moderate edema and mild lymphocytic infiltration, with considerable hyperplasia of capillary endothelium (Fig. 22).

Here, then, is a case which is clinically a clear cut case of mycosis fungoides and which, though of seven years' duration, presents lesions with histologic features indistinguishable from those frequently seen in the ordinary dermatoses. It should be remembered, however, that the lesions were all of the "erythematous" type, and that, according to the findings in Case 4 (a case proved to be genuine mycosis fungoides both pathologically and clinically), in this stage of the disease the lesion do not present a characteristic histologic picture.

BACTERIOLOGY AND BIOLOGY

Case 1.—Emulsions from subcutaneous lymph nodes (removed by biopsy) were injected intracutaneously into rabbits, guinea-pigs and a rhesus monkey. Small nodules appeared at the site of injection but soon disappeared. Permanent results were negative.

Staphylococci and a diphtheroid bacilli were recovered by culture. Large quantities of the latter were injected from time to time in all the laboratory animals without result.

From the lymph nodes obtained at necropsy the same organisms were recovered together with *Bacillus coli*.

Case 2.—A suspension of finely macerated tissue from an infiltrated plaque was injected intracutaneously and intraperitoneally into six guinea-pigs and two rabbits.

After three months the animals were killed and necropsied. The results were negative.

Inoculations from this emulsion were made on broth, glucose agar and glycerin-egg media. Some of the tubes were incubated at 37 C. and others kept at room temperature for five weeks. The cultures were negative.

Case 4.—Inoculations from a skin plaque were made on broth, agar, ascitic agar and unheated human ascitic fluid, and cultivated aerobically and anaerobically according to Noguchi's method for spirochetes. A growth of staphylococcus (epidermis) appeared on all.

The sections from the same plaque stained for bacteria showed the staphylococci located in dense colonies in the vesicles in the corneous layer, but no organisms of any kind in the corium. Scrapings from the tissue were also examined by the "dark field" method for spirochetes with negative result.

Case 5.—Ten c.c. of blood serum were injected intravenously and 3 c.c. subcutaneously into a baboon. The animal is still living (after eight months) without untoward results.

Case 6.—A suspension of finely macerated tissue from a plaque was injected intracutaneously and intraperitoneally into three guinea-pigs and three rabbits, and intracutaneously and subcutaneously into one rhesus monkey. The results were negative.

Cultures from the suspension showed a slow feeble growth of a gram negative diplococcus belonging to the catarrhalis group. Injections of this organism into animals were without result.

SUMMARY

In the study of these cases the diagnosis was made on clinical grounds alone, and rested on the consensus of expert dermatologic opinion. No case was excluded because the histologic picture of the lesions did not correspond to some preconceived idea of what the pathology of mycosis fungoides should be, as might have been done in one of the cases throughout its whole course, and in the earlier stages of some of the others. In this way, I hope I have avoided the errors arising from the use of the vicious circle — which is too commonly taken advantage of — involved in settling the diagnosis by reference to the histology of the lesions, and then allowing this histology to stand in the literature as an instance of the pathology of mycosis fungoides, because it was found in a genuine case of the disease. On the contrary, these observations have been conducted on the presupposition that the pathology of mycosis fungoides is not sufficiently well known to enable one to say whether it is the same in all cases or in the different stages of the same case.

Having made clinical and pathologic observations in this independent way, I may now try to sum up the contributions which I think this study may make towards the solution of the various problems which have traditionally puzzled dermatologists in connection with the interpretation of mycosis fungoides, and I shall treat these questions as briefly as possible in the following order:

ETIOLOGY

1. The results of the bacteriologic and biologic investigations, though conducted carefully and extensively, must be recorded as negative.

2. Is mycosis fungoides a disease *sui generis,* or merely the "end process" of other dermatoses, such as eczema, psoriasis, parapsoriasis, etc.?

This question was thoroughly discussed at a recent meeting of the dermatologic section of the Royal Society in London, and the consensus of opinion among the members present was that mycosis fungoides should be regarded as a disease *sui generis.* This conclusion, however, was based largely on the presumption that the disease presents a pathologic picture from first to last which is essentially different from that of any of the other dermatoses. Though not denying the truth of the conclusion, we are compelled to observe that the particular reason given in support of it is contradicted by the findings in some of our cases. In Case 5, for instance, sections taken from

"erythematous" areas cannot be positively differentiated from several sections in our possession of psoriasis and parapsoriasis. So, too, in Case 7, after the duration of the disease for a period of seven years, sections taken from the various lesions and at different times show no histologic features that may not be found at times in either of the dermatoses just mentioned. While speaking of this question I may briefly refer to a clinical custom based on the presumption that mycosis fungoides is specifically different from the other dermatoses, and that is the ruling out of the diagnosis of mycosis fungoides if the lesions disappear under ordinary treatment. Whether the presumption be correct or not, the custom frequently leads to error. In one of our most typical cases the lesions disappeared at the end of the first year, and the skin remained free for a period of one and one half years. In the literature, too, can be found numerous instances of disappearance and abeyance for long periods of true mycosic lesions following the application of some ordinary lotion or unguent.

3. Is mycosis fungoides an inflammatory or a neoplastic process? It is doubtful how much reliance should be placed on the older reports scattered here and there in the literature of metastatic nodules of sarcomatous type found in cases of mycosis fungoides. Unquestionably, many of these can be put down as cases of independent malignancy. It is significant that in the extensive experience of Kaposi, only one case has been reported. Kaposi, from a study of this case, was led to believe that mycosis fungoides was a sarcomatosis of the skin, but Paltauf, who seems to have had personal knowledge of this case, was equally convinced that the sarcomatous nodules should be regarded as an independent process. Paltauf and von Zumbusch, in their latest work, report two cases with lesions in the internal organs corresponding exactly to those in the skin, which they interpret as "granulomatous lesions" and in no way resembling neoplastic processes.

Of the seven cases here reported, the pathologic changes in two show some features suggesting neoplasm, namely, the striking nuclear changes in Cases 1 and 2, consisting in unusual enlargement, irregularity in shape and chromatin content, frequency of mitotic figures, and sometimes rapid amitotic division with the formation of multinucleated and myeloid giant cells (Figs. 4, 7, 9 and 14). But too much stress should not be laid on these features as indications of tumor growth. Mitotic figures in connective tissue cells and lymphocytes as well as irregular morphologic changes in cells of the lymphocytic series are not uncommon in processes which are undoubtedly of infectious origin. In fact, the histologic features in these cases, which suggest neoplasm, are precisely those which constitute the characteristic marks of the lesions in Hodgkin's disease, and perhaps for the present the most

acceptable interpretation of these two cases would be to classify them as unusual manifestations of the latter disease. The lesions in the lungs and spleen in Case 1 show none of these "tumor-suggesting" features. No one could see in them anything but "subacute inflammatory" or "granulomatous" changes (Figs. 11 and 12). The changes in the bone-marrow also can be best interpreted as representing regenerative hyperplasia in response to injury by some infective agent or possibly to some constitutional defect. So, too, is it in the case of many of the lymph nodes. It looks, then, as if the lesion in these two cases commenced as a truly inflammatory process which in the course of its development begins to show features of tumor growth which might, we conceive, finally preponderate so as to present the picture of simple neoplasm. Such, we know, sometimes happens in Hodgkin's disease, as in the cases reported by Douglas Symmers and others. And I might here refer to a section given to me from a case studied at another clinic as a genuine case of mycosis fungoides. The section shows a typical picture of large round-cell sarcoma. Unfortunately, I was unable to trace the case for further verification.

As to the question, then, whether mycosis fungoides is an inflammatory or a neoplastic process, as far as these two cases are concerned, I can agree with those who claim that it partakes of the nature of both, but that in the stage under observation the inflammatory features predominate.

I think, also, that I am justified in pressing the claim that our observations contribute something definite towards the correct interpretation of the nature of the large cells which are characteristic of the histologic picture in these cases. It has been suggested on purely morphologic grounds by Strobel and Hazen, that these cells, which are so commonly reported as a characteristic feature in mycosis fungoides as well as in Hodgkin's disease, are morphological variations of the myeloblast and myelocyte. We have demonstrated that they give a negative oxydase reaction, and as all cells of the myelocytic series, including the nongranular myeloblast, give a distinct positive reaction, we feel justified in excluding the interpretation of the cells in question as of myeloblastic origin. This, together with other considerations noted in the text, lead us to believe that they belong to the lymphocytic series.

Of the remaining five cases, two, namely, Cases 4 and 5, show a practically identical histologic picture both as to the character of the cellular infiltration and its distribution. There is nothing in this picture that suggests neoplasm. The character of the lesion lends itself most readily to interpretation as a subacute inflammatory process, possibly an earlier phase of that seen in Cases 1 and 2. Possibly, too,

it might be interpreted as a "leukemic" infiltration, provided other factors such as blood picture, etc., were present. The infiltration in these cases, however, is somewhat different in its distribution from that in two cases accompanied by definite leukemia, one reported by Pardee and Zeit, and the other by Shaw and Loughlin. In the leukemic cases the infiltration is most marked deep down in the corium and is not present in the papillæ and papillary layer; whereas, in our cases it is most dense in the papillæ and upper part of the papillary layer.

In Case 6, as has been pointed out in the text, the general features of the histologic picture are the same as in Cases 4 and 5, but scattered here and there are cells which show nuclear changes comparable to those which are characteristic of the histology in Cases 1 and 2. It seems justifiable, therefore, to classify the lesion in this case as a transitional stage between the types of lesion represented in the groups of cases composed of Cases 4 and 5 and 1 and 2, respectively.

In Case 3 the histologic picture of plasma cells, lymphocytes and eosinophils could not possibly suggest anything but a subacute or chronic inflammatory process, and so, too, in Case 7, the histologic features can only be interpreted as those of a mild low-grade inflammation.

DIFFERENTIAL DIAGNOSIS

Clinical.—I have already called attention to the more or less general involvement of the lymphoid tissue in all my cases and of the bronchi in two of them. If, as is strongly suggested by my observations, mycosis fungoides is not limited to skin manifestations, but is a disease with general involvement especially of the lymphoid tissue, any evidence of such involvement would constitute a factor of prime importance in differentiating it from the diseases with which it is most liable to be confounded.

Histologic.—It would seem from our observations that it is only in the "infiltrated plaque" or tumor stage that mycosis fungoides can be positively differentiated on histologic grounds from the ordinary dermatoses, such as psoriasis or parapsoriasis. Outside of the "neoplastic" features above described, and which frequently are not present, the essential difference seems to be one of degree of the edema and cellular infiltration in the corium. In several sections compared, the changes in the epiderm were variable and frequently the same in both. It does seem, however, that with the same degree of change in the corium, epidermal changes, especially parakeratosis, are much less apt to be present in mycosis fungoides. Earlier than the plaque stage should characteristic epidermal changes be absent, a differential diagnosis could not be made. In one case of parapsoriasis, and in one case of psoriasis, the edema and cellular infiltration in the corium were more

marked than in the erythematous stage of one of my cases of mycosis fungoides, and the distribution of the exudate the same as in four of the cases.

From the ordinary granulomas it may be distinguished by difference in character and distribution of the exudate, as well as in the degree of the reaction on the part of the tissues. In short, the differential points handed down in the literature are confirmed by my observations.*

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* This paper by Dr. Fraser, the paper by Dr. Wise, published in THE JOURNAL for October, 1917, and the paper by Dr. Cole, published in *The Journal of the American Medical Association*, Aug. 4, 1917, comprised a symposium. The discussion following these articles will be found in the Transactions of the Dermatological Section of the American Medical Association for 1917.

THE PROBLEM OF HYPERTRICHOSIS*

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The purpose of this paper is to consider the question of hypertrichosis from the viewpoint of a considerable experience and to endeavor to clarify if possible the rather murky present-day status of the disorder. If an apology is necessary for the selection of this subject for discussion, it may be said that for every dermatologist this disagreeable abnormality is like Hamlet's ghost: it will not down; or like Lady Macbeth's blood-spot: it will not out. For him there is no escape, and no doubt he feels tempted at times, when these cases present themselves, to express his feelings in language similar to that of Lady Macbeth in her somnambulistic efforts to make herself presentable.

That hypertrichosis is a problem cannot be disputed. That it is one which dermatologists have constantly before them and which they love to sidestep must also be admitted. Why it is a problem and why it is disliked by the specialist to whom the condition logically comes, are points easily explained. First, hypertrichosis in some degree is relatively common; secondly, the condition is regarded universally by women with intense repugnance, and relief from an abnormality so distressing to them is sought from the skin specialist sooner or later; lastly, the dermatologist knows that ideal relief is all but impossible and that the requirements for tolerable relief are often difficult to meet. The result is that the treatment of this disorder, especially the early treatment, has passed largely into nonmedical hands, which fact is not for the good of the patient and does not reflect great credit on our specialty.

The persistency and determination which mark the efforts of women to secure relief from their excessive hair growth indicates that the ultimate compelling motive is exceedingly powerful. The fact that the presence of hair on the face in the male and the absence of the same in the female are both secondary sex characters shows that this motive has its basis in the sex element of human nature. The woman afflicted feels herself an object of repulsion to the opposite sex, and as a result, set apart from the normal members of her own sex. She realizes that she bears a stigma of the male and that she does not run true to the female type; therefore, every female instinct

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in her demands that the thing that marks her as different from other women be removed. This demand is intense and insistent, and if it is not met, the course of the victim's life is often profoundly and adversely influenced. To one who has seen many of these cases the story of an existence made narrow and limited, of opportunities passed by, of self-imposed seclusion, and even of contemplated suicide is not unusual. There are good reasons, therefore, why very definite efforts should be made to relieve this class of dermatologic cases.

In a preventative way that which may be done is dependent on the etiology of the disorder. Practically all cases have in their causation one or more of the following factors: (1) heredity; (2) ill-chosen treatment; (3) antecedent inflammatory dermatoses, and (4) disturbances of function of certain of the endocrinous glands.

I have found that heredity is the most frequent factor. The condition is seen very often in several members of the same family, and may be traced in the lateral branches of the same stock. A racial tendency is observable, notably in those of Jewish and of Celtic extraction. Ill-advised attempts to relieve a mild condition of hypertrichosis may be considered the second most common cause in the production of the severe types. Though practically always secondary, this factor usually becomes the most important of all. In this direction are to be seen the harmful effects of the commercialized activities of the beauty parlor and the beauty column of the newspapers. Antecedent chronic inflammation must be accepted as a fairly common cause. Facial hair growth is frequently seen following prolonged and severe acne; in fact, so commonly has this been observed that a point in the treatment of acne has become almost axiomatic, namely, that nothing shall be used that might contribute to facial hair growth.

The inferential presence of sex in the emotional reaction to hypertrichosis suggests the possibility of sex factors in the etiology. As the whole subject of sex is fundamently and most intimately related to the functions of the ductless glands it seems probable that in these something might be found that would bear directly on the subject under discussion. In two instances the writer has observed what appeared to be a clear relationship between severe hypertrichosis and ductless gland disturbance. The two histories were similar; both were young women and coincident with a gradual diminution and final cessation of menstruation, there appeared a decided increase in body weight and a marked development of facial hair growth. Such a syndrome could scarcely fail to direct attention to the gonads.

This subject — the relationship of the endocrinous glands to the activities of the pilary system — is a fascinating one, difficult to explore, but full of possibilities. It is one that dermatologists should survey more carefully than has been their usual custom, since it con-

cerns loss of as well as overgrowth of hair. How many, for instance, in prescribing for an alopecia, give even a passing thought to the possible influence of the endocrinous glands in the case?

The glands which have been proven experimentally to be related to the pilary system are the thyroid, the hypophysis, the suprarenals and the gonads. Leopold-Levi[1] summarizes this relationship as follows:

(*a*) The thyroid has an essential action on the hair growth of the scalp, the eyebrows, and the eyelashes.

(*b*) The ovaries and testicles have an essential action on the hair growth of the pubic and axillary regions.

(*c*) The testicles in addition have a direct action on the hair of the body, the beard and the upper lip.

(*d*) The hypophysis and the adrenals, indirectly through the testicles, influence the body hair, exclusive of the scalp region, the eyebrows and eyelashes.

To explain all the findings with reference to ovarian secretion it has been necessary to assume[2] that the ovary is essentially an hermaphroditic organ of which a part is "femininogenetic" and a part "virilogenetic." The former normally predominates, insuring to the individual the sex characters of the female. The latter is analogous in action to the testicle, and should its influence become predominant, a partial suppression of the female sex characters results, with a development of those of the opposite sex, among which must be counted facial hypertrichosis.

With the above etiologic facts in mind, an estimate can be made of what can be done in the direction of prevention.

Hereditary tendencies cannot be influenced by any scheme of treatment. The patient who belongs to this group stands in great need of sound and conscientious advice when the condition first begins to show, if she is to escape more distressing experiences in the future.

It is very difficult to prevent the common practice of "tinkering" with a slight hair growth. Early recognition and thoughtful consideration by the mother of her daughter's problem, combined with sane advice from a dermatologist, offers the best solution. But this combination of agencies is rare, and when found has usually been put into operation after more or less harm has been done.

Prompt relief of acne by carefully considered methods would undoubtedly prevent the development of a fairly large number of these cases.

A more careful study of ductless gland possibilities in severe cases is distinctly demanded. Such a study in many instances will be difficult, since it involves a type of inquiry which might be quite distasteful

1. Leopold-Levi: Bull. et mém. Soc. méd. d. hôp. de Paris, 1913, 3s, 31, p. 956.
2. See Footnote 1. Swale, Vincent: Internal Secretions and the Ductless Glands, London, Edward Arnold, 1912, p. 76.

to the patient. On the other hand, her state of mind might cause her to favor any investigation which promised help. How far a discovered abnormality of internal secretions could be met by medication would have to be worked out. If, for instance, the theory of the hermaphroditic nature of the ovary be true, the administration of ovarian substance, in cases similar to those previously cited, might be entirely without result; whereas extract of corpus luteum, representing presumably the "femininogenetic" element of the ovary, might influence the condition favorably. The therapeutic value, if they possess any, of thyroid, hypophiseal, and suprarenal medication in these cases is not yet determined.

Of the numerous methods which have for their object the removal of hair, only a few have any claim to the term curative. The remainder are merely palliative if not actually harmful. Clipping, shaving, the use of depilatories, epilation, attrition with pumice stone and bleaching cannot possibly do away permanently with the hair growth; at best, they can serve only a temporary purpose. For permanent removal, electrolysis, the roentgen ray, the Kromayer method, and radium have been used effectually. But no method is ideal. Electrolysis has been in use the longest and is without doubt the least objectionable. The Roentgen ray and radium which acts similarly, will do the work, but in the dosage required to permanently remove the hair, they are certain to damage the skin so seriously as to make their employment for the purpose distinctly ill-advised. The circular knife method of Kromayer is promptly effectual — in fact, it is the most certain of all — but it is painful, very bloody, and inevitably scar-forming. It has never come in vogue in this country and probably never will.

The objectionable features of electrolysis are several, and of considerable importance. It is a slow and tedious method, trying to both patient and operator. It is not usually immediately efficacious, since many of the hairs return after the first removal. Being time-consuming, it is relatively expensive even though a modest charge is made; for this reason the treatment is often beyond the means of many who need it. On the other hand, the work is sufficiently trying on the operator to warrant a tangible fee.

The first objection cannot be overcome entirely. The nature of the procedure requires that the movements of the operator be deliberate and painstaking. The use of multiple needles may seem to speed up the process, but in the long run that technic has no advantages over the use of the single needle. Besides being more painful the multiple needle method is mechanically wrong, since, because of the slack in the cord and the weight of the needle-chuck, it will not permit the needle to stay where placed during electrolysis without being held there by the hand of the operator. This being the case, to be effectual it

becomes a single needle method. There can be no substitute for the steady hand of the operator in "catheterizing" the hair follicle and maintaining the needle in proper relationship to the structures to be destroyed.

The second objection touches the heart of the problem. The fact that any hairs return — it matters not what percentage — is always disconcerting to the patient. She reasons that if they come back once they will come back always. The logic is fallacious, since a partially destroyed follicle may be able to develop a return once or twice before undergoing atrophy. Moreover, experience shows that with persistent and skilful use of the needle, the hair is destroyed.

There are several factors concerned in the return of hair after removal with the electric needle. The entire matter turns on the insertion of the needle and the amount of current used. Concerning these points there is much that is uncertain and nothing that can be managed by rule; for guidance the operator must depend on his judgment based on previous experience. In inserting the needle the gentlest pressure must be used lest in the angling follicle the point penetrate the sides and miss the vital structures; one is working in the blind and must depend on the sense of touch to guide him to the follicle base. After the needle is placed, the amount of current to pass in order to destroy the hair without producing a scar is a very real problem. Many women do not object to scarring; others will have none of it. It is practically imperative that one proceed on a nonscarring basis; yet it is perfectly clear that an amperage that results in a scar at the skin surface is much more apt to destroy effectually the deeper structures of the hair follicle. Hence the operator is in a delicate position: if he uses insufficient current the hair returns and he is criticized; if he employs too much current, scars may result and again he is blamed. To avoid these rocks he must be careful, painstaking and experienced, and must not allow himself to be stampeded into hasty, careless work. When in doubt he must choose a conservative course, although it may mean a larger percentage of returns, a slower attainment of ultimate success and a seemingly greater expense to the patient.

If a needle could be devised which would be insulated to one-sixteenth of an inch from the point, yet slender enough to permit easy passage through the follicular opening and stiff enough to bear some resistance, a heavier current could be used with entire safety from scarring.

In endeavoring to steer a safe course the writer has found two guide-points, evolved from a long experience, to be of great assistance, namely, that the appearance of a minute circular vesicle about the follicular orifice is a sign that electrolysis must be interrupted if scarring is to be avoided; further, that 1½ milliamperes is the safest and most

effectual amount of current to use consistent with reasonably rapid work. More current is apt to lead to scarring, less will prove ineffectual unless compensated for by an increase in the time of exposure.

It is obvious from the foregoing that several factors contribute to make the process of electrolysis a slow one, even though the operator work industriously, carefully and skillfully. This means that the relief of severe cases requires time and is essentially an expensive matter. It means, too, that many dermatologists cannot give these cases their personal attention. How to meet this phase of the problem must be left to the judgment of each man. It is certain that every patient should know the facts, pro and con, with reference to electrolysis for hypertrichosis, so that she may choose her course of action knowingly.

SUMMARY

The points which should be emphasized are these:[3]

Hypertrichosis is an abnormality which is extremely distasteful to women and which is and will be constantly coming to the dermatologist for treatment.

Although dermatologists do not look with favor on these cases because of the difficulty of relieving them, there are good and sufficient reasons why they should aid these patients in every way possible.

Careful consideration of the etiology in each case may show that much can be done in a preventative way; and in this search for etiologic factors, for the sake of scientific advancement in our knowledge of hypertrichosis, more attention should be given in all cases to endocrinous gland possibilities.

Of all methods for the permanent removal of superfluous hair, electrolysis remains the best, though it is far from ideal. Objections to the method probably will never be completely removed, but they

3. See for general discussion: Brand: New York Med. Jour., 1913, 97, pp. 706-709; Freshwater: Practitioner, London, 1913, 90, pp. 825-840; Cane: Eugenic Review, London, 1913, 4, pp. 257-283; Belot: Arch. de elect. méd. expér. et chir., Bordeaux, 1912, 21, pp. 177-195; Geyser: JOUR. CUTAN. DIS., 1912, 30, p. 219, and Am. Jour. Dermatol. and Gen.-Urin. Dis., St. Louis, 1911, 15, pp. 574-377; Baum: Jour. Am. Med. Assn., 1912, 49, pp. 104-106; Saalfeld: Med. Klin., Berlin, 1912, 8, pp. 735-738; Schwender-Trachsler: Arch. f. Dermat. u. Syph., 1912, Orig., 109, pp. 67-76; Burtt: Science, New York and Lancaster, 1910, 13, pp. 854-858; Fugino: Sei-i-Kwai Med. Jour., Tokio, 1911, 30, No. 8; Paschkis: Wien. med. Wchnschr., 1911, 61, pp. 369-448; Bathhurst: (Treatment by Electrolysis), Practitioner, London, 1915, 95, pp. 684-687; Weil, A.: Paris médicale, 1912-1913, 11, pp. 551-553; Bechet: New York Med. Jour., 1913, 97, pp. 313-316; Dubreuilh: Presse méd., Paris, 1912, 20, pp. 775-777; Weidenfeld: Wien klin. Wchnschr., 1911, 24, p. 94; Sandek and Novak: (Treatment by X-Ray and Radium), Wien. med. Wchnschr., 1914, 64, p. 680; Speder: Strahlenstherapie, Berlin-Vienna, 1913, 3, pp. 314-332; Heidingsfeld: Lancet-Clinic, Cincinnati, 1916, 116, p. 305; Rayner: Brit. Med. Jour., 1912, 2, p. 480; Sairl: Lancet, London, 1912, 2, p. 513; Stein: New York Med. Jour., 1912, 95, pp. 21-23; MacKee: JOUR. CUTAN. DIS., 1917, 35, p. 171.

can be greatly reduced in the hands of careful and experienced operators.

For the mutual benefit of both consultant and patient, the latter should be told frankly the full situation with respect to her hypertrichosis so that she may act with fore-knowledge.

DISCUSSION

Dr. Ruggles said that in regard to the multiple needle instrument, he had been using it for several years and in certain cases it had great advantages. In the case of large hairs he could remove them rapidly with this instrument and finish up a case in shorter time without any extra scarring and without more pain than by one needle alone. He recalled the case of a young woman who treated a goiter with a salve. He did not know the nature of the salve, but she had a rather profuse growth of hair over the gland and nowhere else on her face. It seemed to him it was evident that the salve had something to do with the development of the hair.

Dr. Pusey said he did not know why Dr. McEwen apologized to him. He gladly accepted the apology because of his clear explanation of the etiology of this disease.

In taking up the etiology of hypertrichosis he was glad Dr. McEwen brought up the matters of disturbance of metabolic function and the endocrinous system because they were suggestive and made one think about them, and even if we were not in a position to arrive at a definite conclusion, it was worth while drawing our attention to these things and how we were going to get there. In regard to the treatment of hypertrichosis, he felt that the roentgen ray should be given up as impractical. He had had a curious experience. He bought the first roentgen-ray outfit to remove hairs from a particular patient and he had a result that had been permanent up to the present time, but he had never had such a success since. Once in a while he obtained a good result with the roentgen ray, but it was not a safe procedure in this class of cases, in his opinion.

Dr. Davis said that we should tell patients with hypertrichosis what they were to expect. He had done a great deal of this work, and he thought we should tell a patient that if the treatment was properly carried out, 70 to 80 per cent. of the hairs will stay away. There will be 20 per cent. recurrences. He was able to satisfy patients this much, that if we removed 75 per cent. of the hairs and 20 per cent. of these came back, they will not hold us responsible if they did come back. He did not believe on an average any one could do better than 80 or 85 per cent. without recurrence of the hairs.

Dr. Wise said he was fully in accord with the statements made by Dr. McEwen, but he did not consider the problem of treatment of hypertrichosis insurmountable in many cases, and this was particularly so in wealthy women who had plenty of time. We could take our time in treating these cases, using an amperage of low intensity as Dr. McEwen advised, with less tendency to scarring. In New York they had established a separate department at the Vanderbilt Clinic for the treatment of hypertrichosis in poor patients. The speaker said that in the last three years he had had four cases of hypertrichosis in patients who had extensive superfluous hair and enlarged thyroid, marked obesity and infantile uterus, all in virgins. That syndrome occurring in four patients within three years was, he thought, a rather remarkable finding.

Dr. Lieberthal said he would like to call attention to the etiology of hair as it occurred on the extremities of women. He had frequently observed hypertrichosis in young women who were in the habit of staying in the water very long when bathing and sunning themselves. In these cases the actinic rays as well as the other rays from the sun stimulated growth so that there was a considerable development of hair. He believed it was absolutely wrong to treat these patients longer than ten or fifteen minutes at a time. All we needed

to do was to remove the hair. If the treatment was continued for forty-five minutes or an hour, we tended to stimulate the growth of hair. It was better to use, say a number of treatments at shorter intervals, than to use long treatments, as by so doing we could accomplish good results by painstaking work. Dr. Davis had said that in 20 per cent. of the cases after treatment there would be a recurrence of the hair. He would go a step farther and say half of them would recur, but they might be removed again. We had to do that if we would benefit the patients. The patients came to us for relief and if we did not give them the relief they desired, they would go to the so-called beautifiers, and some of these people did excellent work.

DR. HARTZELL said there were a number of things which might be mentioned in connection with this subject. He did not believe that in any case, in which there were considerable hairs, it was possible to remove them permanently without scarring. Moreover, he thought we should be altogether fair with our patients, perhaps because he detested this operation, and he advised women who had a small growth of hair to leave it alone. Usually they did not let it alone; they went to someone else, but he thought that was good advice to give them. The speaker thought we ought to place ourselves on record about the use of certain agents. He had very grave doubts whether it was justifiable to employ the roentgen ray or similar remedies for the treatment of the class of lesions under discussion and for defects. The risk was too great and he did not think we ought to assume any such risk as that.

DR. MCEWEN said that, regarding the use of multiple needles, he had not used multiple needles to any great extent. He undertook to use them once. He said the reason that this method was more painful was this: The painful moment in electrolysis was while the needle was being introduced when the current was on. When the operator had multiple needles, if he was going to manipulate them to prevent pain, he was going to lose time. With the multiple method the needle head could not be placed so as to get the needle to stay firmly in situ, without wabbling to one side. As to the return of hairs, there was certainly going to be a return of them, but he thought it was extremely difficult to say in what percentage of cases they would return. That sometimes depended on the case. If you get a heavy hair growth you will not destroy the hair as rapidly as if it were a slight growth. Twenty per cent. of recurrence was all right, but he suspected that in many instances it was nearer to 50 per cent. It was a very hard thing to say to a lady that there was going to be some return of hair; but after the second or third removal the recurrences were greatly reduced. The problem of removing hairs in rich patients was not so great because they could pay and could pass through treatment without taking the full current of 1½ milliamperes. He gave that amperage simply with the idea that it represented a point beyond which we had better not go, and if the physician intends to do effectual and rapid work he cannot go much below that. Probably 1 milliampere would do pretty well. When a one-half a milliampere was given the operator did not get along very fast, and with the poor people that counted. Even if a very low price per hour for treatments is made, the poor could not pay it.

So far as clinical work was concerned, he did not think the problem of the poor could be solved in the clinics.

As to the question of short treatments, if it is an extensive case of hypertrichosis the operator could never get through with it in fifteen minute treatments. The objection Dr. Lieberthal raised could be met by scattering treatment over the entire surface, but he had not felt convinced that treatment had a great deal to do in the matter of stimulating the neighboring hairs. It should be considered a possibility, but it was not something that was constantly demonstrated.

The speaker agreed with Dr. Hartzell that in extensive cases requiring long treatments we did not get the hair off without having some evidence of scarring in the form of small atrophic spots resulting from electrolysis.

THE PREOPERATIVE REDUCTION OF EPITHELIOMA BY ROENTGEN RAYS OR RADIUM

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AND
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A primary radiation with radium is now an accepted principle in the operative treatment of cancer in certain situations, as, for example, of the uterus including its cervix, of the vagina, of the rectum, of the tongue and even of the lips. This principle may be made use of in cancer of the skin, and by it in some cases the resulting scarring and deformity may be notably reduced, also cancers justly regarded as inoperable, may be brought well within the limits of more easy eradication. The following case is a good example of what may be attained by employing the roentgen rays within the limits in which they act beneficially.

REPORT OF CASE

A man, aged 91 years, consulted us on account of an epitheliomatous ulcer occupying almost the whole left side of the nose. It had begun some years previously as a seborrheic patch, of which he had a great number on the face and on the backs of the hands. His relatives brought him to us with no hope of cure, but with a desire that something might be done to relieve the disfigurement and the repulsiveness of the affection, and thus prevent it interfering with the happiness and comfort of his declining days.

It was impossible to curet the whole lesion, as the shock probably would have killed the patient. He was first given five roentgen-ray exposures of thirty minutes each, from a medium tube at 4 inches distance, spread over a period of twenty-two days, after which there was a marked reaction with flattening of the edges of the lesion. By December 14, there was decided improvement, and on this day we gave him another roentgen-ray exposure of thirty minutes directed into the deep portion of the ulcer near the eye.

On December 21, we were able to curet the area nearest the tip of the nose, after which we applied the roentgen rays to the raw surface for thirty minutes, and then swabbed it with the acid nitrate of mercury.

On December 28, the surface nearest the eye was treated in the same manner, a procedure that previously we would not have dared to attempt.

By January 25, everything was healed but the upper part of the ulcer. On April 4, we had to curet this also, and on doing so we came down on uncovered bone, and besides this there was a cushion-like ridge above the edge of the ulcer which we scraped away. The raw surface was exposed to the roentgen rays for thirty minutes, and then chromic acid crystals were poured on and pressed in. The resulting crust came away the following month, and during May, June, July and August we gave in all 125 minutes of roentgen-ray exposure in broken doses. In the meantime some small pieces of necrotic bone were exfoliated, and the lesion healed entirely, leaving a small hole leading into the nasal cavity.

At no time was the patient seriously incommoded by the treatment, and the pain occasioned by the procedures was obtunded to a bearable degree by infiltrations of weak cocaine solution.

There is a curious type of mind which demands that one disease should have one kind of treatment, and which refuses absolutely to consider the physical properties of the therapeutic agents which we employ. With such people the treatment of disease is not a policy, it is a creed, and this is the attitude which it is wished to avoid. For instance, if the roentgen rays had been relied on entirely in the above case just cited they would have failed. They would not have been thoroughly effective through the thick layer of cancerous tissue. If a too strenuous attempt had been made to render them effective, they might have irritated the cancerous growth instead of controlling it. Another mistake would have been to attempt the reduction by the roentgen rays alone, of the roll of cancerous tissue at the upper border of the ulcer. Such a course would have injured the intact external epithelial layers without absolutely annihilating the subjacent epithelial infiltration.

Valuable as the roentgen rays are in the treatment of epithelioma of the skin there is also no doubt of the decéptive nature of a healing depending wholly on them. The theory of their action and of the action of radium in this disease is the same. As the young cells of the neoplasm divide, the rays strike them at this tender period of their development and kill them. When this theory is borne in mind, a prolonged moderate, rather than an intensive short, treatment with roentgen rays is preferable. It is possible that because it is steadier and more prolonged that radium is better than roentgen rays in these forms of radiant energy, which are so alike in their therapeutic action. Nevertheless, from the very nature of things some cells may escape or be only inhibited, and the following case is an instance of how deceptive the result of roentgen-ray treatment may be:

An attorney, aged 50 years, was referred to us, July 14, 1911, because of a crateriform epithelioma situated just above the tip of the nose. It had begun seven years previously as a small red spot. Roentgen-ray treatment was started, with the intention of reducing the size of the lesion and then curetting it. The reaction obtained was intense and after its subsidence the result was so good that further treatment was considered unnecessary.

Three years afterward the patient wrote that the scar was intact, but that it was mottled red and showed a tendency to scale. Shortly after this, March, 1915, the patient returned with a recurrence about the size of the end of a lead pencil. This was curetted down till a solid stellate scar was reached, and the raw surface was burned with crystals of chromic acid. Four weeks subsequently, after the scab produced by the cauterization had sloughed off, roentgen rays were administered to the raw surface, and the lesion healed with a pliable, white, thin scar.

This regrowth under the scar was of particular interest, and was quite different from those recurrences which are seen at the edge of a

scar. These latter are frequently little foci, so small at the time of operation on the main lesion as not to be clinically apparent. Not being apparent they cannot be treated and therefore their occurrence is unavoidable. The regrowth under the scar in the present instance was of an entirely different nature and was due to inefficient treatment. The first course of the roentgen rays had annihilated the superficial epitheliomatous cells, but the very deep cells were not killed, they were only inhibited and after a time began to grow under the full extent of the scar.

What may be achieved by the use of roentgen rays or radium is so wonderful in suitable cases as not to require any embellishment. These remedies, however, must not be employed beyond their potentialities, nor should the physician, because these potentialities are so effective, neglect the consideration of other potent therapeutic agents.

Society Transactions

CHICAGO DERMATOLOGICAL SOCIETY

Annual Meeting, Jan. 16, 1917

Udo J. Wile, M.D., *Chairman*

LUPUS VULGARIS ERYTHEMATODES. Presented by Drs. Harris and Stillians

The patient was an Irish building contractor, aged 73 years. The present trouble started when he was 67 years of age, after the patient was scalded by steam.

The lesions consisted of maculo-papules, giving the typical apple-jelly appearance, aggregated in a patch covering nearly the whole left side of the chest, anteriorly. Other large patches covered both cheeks with approximate symmetry. Smaller groups of lesions were found on the scalp, trunk and arms. Atrophic scars were present at the center of the patches. No ulceration had been seen at any time. The only subjective symptom was itching.

DISCUSSION

Dr. Sutton considered the case an extremely interesting one, and said that this type of lupus vulgaris was comparatively rare in America. Examples of disseminated lupus, following varicella and other exanthematous diseases, were not uncommon in England. He had encountered but one other case of the disseminated type in America.

Dr. Pardee reported another case of the same sort which was disseminated over the entire body. The patient was a woman of 40.

Dr. Pusey said he had seen another case, also in an old man, which was practically a replica of this one. Both showed very excessive areas of lupus vulgaris of the erythematoid type. He had seen no other cases but the resemblance between these two was remarkably striking.

CASE FOR DIAGNOSIS. Presented by Dr. Ormsby

The patient was a man, aged 70. The lesions had been present for about sixteen months. The disorder began as an eruption on the dorsi of the hands and resembled a "pimple." The itching was severe at times. There was no appreciable etiologic factor.

There were symmetrical lesions on the dorsi of both hands, 7 cm. in diameter. On the right hand they were circular, on the left hand quadrangular. The involved areas were elevated, well defined, yellowish-red, with well defined margins. Under the diascope, all color faded. Microscopic sections revealed great increase in vascular elements. No change had been seen under treatment of several months' duration.

DISCUSSION

Dr. Heidingsfeld classed the case as an obscure dermatosis which beggared accurate classification. Microscopically, the excessive amount of collagenous connective tissue was suggestive of scleroderma, save for the excessive and deep-seated vascularity.

Dr. Ravogli thought that taking all the symptoms and considering the persistence of the affection, it could be referred to the syndrome of Pick. Of

course there was an atrophic condition, and the atrophy beginning after the congestion had remained a long time. He had had one or two cases which lasted four or five years and ended with an entirely atrophic skin which was very thin. They were accompanied by no itching or pain, but following the inflammatory condition the skin began to waste away, leaving just a thin, parchment-like appearance.

Dr. Pusey thought the case was very obscure but believed it belonged in the group of cases in which there was round-cell infiltration undergoing degeneration. He thought it might very well be put with Crocker's cases of erythema elevatum diutinum, in which there were elevated, chronic patches undergoing degeneration. That had been described as identical with granuloma annulare. He thought another obscure field in which to put those cases was sarcoid. He thought it was not a scleroderma or an erythema perstans.

Dr. Harris thought it might be scleroderma. He said the sections showed distinct change in the collagen, which reminded him of a scleroderma.

Dr. Sutton said he could not agree with the diagnoses made. He believed that Hartzell was correct regarding the clinical and histologic identity of erythema elevatum diutinum and granuloma annulare, and the aspect of this case was certainly far different from that of granuloma annulare. One might consider it an example of erythema perstans, such as Wende and Fox first described, the term being sufficiently broad to avoid incriminating any one. So far as scleroderma was concerned, he thought it did not resemble that disorder in the least. The collagenous degeneration characteristic of that condition was entirely wanting.

Dr. Ormsby said he could not add anything further. He had studied the case a great deal and thought the vascular changes shown histologically were very interesting. He had no diagnosis to offer.

VASCULAR NEVUS SHOWING THE EFFECT OF TREATMENT WITH QUARTZ LAMP. Presented by Dr. Pusey

The patient was a girl, aged 20, with a flat vascular nevus, part of which was untreated and showed as a dark red surface, and part was light pink where it had been treated with the quartz lamp.

TUBERCULOSIS OF SKIN. Presented by Dr. Pusey

The patient was a woman, aged 24, who had a single nodule of tuberculosis in the lobule of the right ear. She had no other tuberculosis in the skin and no evidence of tuberculosis of the lungs, or elsewhere. Many bacilli had been found in the sections.

GRANULOMA ANNULARE. Presented by Dr. Stillians

The patient was a young woman who first noticed "lumps" forming about the elbows, eight years ago. Since then they had gradually increased in number and size and others had appeared on the knees and backs of the ankles. The lesions were hard and subcutaneous nodes, varying in size from a pea to a lima bean, the more superficial ones being light yellow. They were round or oval with flat tops, some of them slightly tender. The blood count was normal. Wassermann reaction was border-line to weakly positive, on several examinations. The von Pirquet test was doubtful; one spot reacted on the third day, others negative. Histologically, the tissue showed areas of degeneration in the corium, with surrounding zones of epithelioid cells and leukocytes.

PARAKERATOSIS (PITYRIASIS LICHENOIDES, JULIUSBERG TYPE). Presented by Dr. Ormsby

The patient was a man, aged 33. The disorder was of seven years' duration. The patient was demonstrated before the American Dermatological Association in 1915, and reported in The Journal of Cutaneous Diseases, 1915, 33,

p. 390. The symptoms now exhibited were there described. No change had been noted during the interim, in spite of treatment.

DISCUSSION

DR. HEIDINGSFELD said, in regard to parakeratosis, that some of the clinically well-defined cases of this character, seen some five or six years ago, returned with well-defined relapses of psoriasis vulgaris. He was beginning to feel that a great many of the erythrodermias of the skin were closely akin to psoriasis and that there was a possible "psoriasis habitat" present in many individuals which predisposed to the scaly eruptions that occurred at times in syphilis, lichenoid eczema and other scaly eruptions of the skin.

DR. ORMSBY stated that this case represented one of the most persistent of cutaneous disorders, and said that in this instance there had been no change of type of lesion. The lesions had remained practically the same for the last six years. The persistence and lack of response to treatment were two prominent features of parapsoriasis. Recent experience had shown that the three types of lesions described in the various cases were expressions of a single disease, as they had all been demonstrated in the same patient. He did not think that psoriasis was a factor, though in some instances the lesions were psoriasiform.

RECURRENT URTICARIA BULLOSA WITH PIGMENTATION. PRESENTED BY DR. HARRIS

The patient was a woman, aged 29, who had had an attack of hives three years previously. There was recurrence two years later, two attacks three months apart, in the spots previously affected. Then no recurrence until one year ago, since which time she has had nine attacks, either just before or just after the menstrual period. The eruption always affected the same spots. The skin was infiltrated, somewhat elevated, of a deep red color, becoming lighter in the center of the lesions. The lesions were accompanied by itching and at times were vesicular. As they disappeared, a brown pigmentation remained.

DISCUSSION

DR. SWEITZER thought there might be some glandular disturbance, as the general skin color seemed to be darker than it should be and there was definite pigmentation.

DR. IRVINE said he had seen quite a number of cases of the same type which tended to be generalized, clear up under thyroid extract. Most of them had been in children with very dry hair and dry skin.

ANGIOKERATOMA. PRESENTED BY DR. SENEAR

The patient was a young lady, aged 29, who presented an angiokeratoma following chilblains. The condition had been present about two years. There was no history of any other vascular anomalies in the family.

The conditions were most marked on the dorsal surfaces of the toes of the right foot; here were seen numerous reddish, pin-point to pin-head sized lesions, composed of dilated capillaries. These were for the most part discrete but on the third and fourth toes had become confluent, forming larger lesions, the largest about the size of a split pea. These larger lesions were the only ones which showed the keratotic element, their surfaces being distinctly elevated and warty. The other lesions on the toes, as well as those over the adjoining portion of the foot, and those on the backs of the fingers, showed only the angiomatous element of the disease. Both the hands and feet were cold and blue, and the hands were puffy, due to an increase in the connective tissue, resembling the change seen in cases of lymphatic obstruction. The patient stated that her hands had always been like this.

TUMORS FOLLOWING VASELIN INJECTION. PRESENTED BY DR. ORMSBY

The patient was a man, aged 36. Injections of white vaselin were made seven or eight years ago, the first change being noted three years after the injections. There was extensive involvement of both cheeks in the region below the eyes. The lesions were nodules and tumors of various sizes, deeply seated and movable. The overlying skin showed little change. Several treatments with the Roentgen ray, using the Coolidge tube and aluminum filter, had been given, with but little change in the condition.

LUPUS ERYTHEMATOSUS DISSEMINATUS. PRESENTED BY DR. ORMSBY

The patient was a man, aged 22. The disorder began in January, 1915, on the face and dorsi of the hands. The lesions spread rather rapidly, and in May became generalized. After several months of distressing illness, the lesions began to clear, and for more than a year past they had been limited to the face and hands.

The lesions presented were exhibited as erythematous, with a sebaceous element and some scarring over the face and forehead. Large bluish-red nodules were present on the dorsal surfaces of both hands, including the fingers. The nodular element was a recent development. Originally, the hands had erythematous lesions only. At the height of the general attack, the temperature was elevated and the patient presented a hopeless appearance.

Among other remedial agents, autoserum was employed with apparent benefit. The patient's general health at the time of presentation was good.

DISCUSSION

DR. SUTTON said that he had seen a few cases of lupus erythematosus which were possibly due to the presence of a tuberculous toxin, but he considered it extremely improbable that the ordinary, chronic type of lupus erythematosus was a tuberculous process. The fact that the disorder was rarely encountered in the tuberculosis sanatoria of Colorado (Markley) was a strong factor against the probability of such an origin. The acute, disseminated variety of the disease, such as occurred in this case of Dr. Ormsby, was probably tuberculous, however, if we may judge by the after-history of the reported cases. The majority of these patients died of pulmonary tuberculosis.

PSORIASIS, GENERALIZED, INVETERATE. PRESENTED BY DR. ORMSBY

The patient was a man, aged 35, who was first examined in October, 1905. On first examination, the only areas involved were the palms, soles and hairy regions of the body. Later the eruption became generalized and persisted in spite of all treatment. During the last year, much treatment with autoserum had been given, which was the first remedial agent that had been effective. Chrysarobin was used in combination with autoserum, as was usually done. The patient was shown to illustrate a case beginning in an unusual way, having an obstinate course, but finally being benefited by autoserum.

BLASTOMYCOSIS. PRESENTED BY DR. ORMSBY

The patient was a man, aged 44, who had had blastomycosis for two and one-half years. The original lesion, when first seen, was 5 cm. by 8 cm. in size, and was situated over the right angle of the jaw, extending downward over the neck. The patient had been treated continuously with potassium iodid for a long period, with only moderate improvement. In June and July, 1916, four injections of salvarsan were given with some improvement. Immediately on the resumption of potassium iodid, the entire area cleared up and had since remained well.

The result appeared to demonstrate that salvarsan sensitized the patient, so that when the iodid was resumed it was immediately curative.

BLASTOMYCOSIS OF ELBOW. PRESENTED BY DR. ORMSBY

The patient was a man, aged 49, who was first examined by the speaker in October, 1906. The earliest lesion was joint involvement, which was considered tuberculous and was operated on. Later, cutaneous lesions occurred, which were typical of blastomycosis.

A large area above the elbow showed the typical lesions of blastomycosis, together with one area of the hypertrophic type. Much scar formation was present around and below the joint. The hypertrophic area at one time became so prominent that a malignant transformation was suspected, but a histologic examination of tissue removed, revealed only blastomycotic changes. During the summer of 1916, salvarsan and potassium iodid had been combined in the treatment of the case, without result. In spite of treatment, the patient was gradually losing ground.

BLASTOMYCOSIS. PRESENTED BY DR. PUSEY

The patient was a man, aged 50, who had at different times blastomycosis of the skin, lungs, prostate, epididymis, and probably of the kidney. He had come under observation first in June, 1914. At that time he had many mulberry-like lesions on the face, trunk and upper extremities; he also showed symptoms suggesting extensive pulmonary tuberculosis. At that time blastomycetes were found in the skin lesions and in the sputum. At one time they were found in pus in the urine, presumably from the kidneys. Following that there developed prostatitis, and blastomycetes were recovered from the prostatic pus. This was soon followed by an epididymitis, which was undoubtedly blastomycetic. Under potassium iodid, and nothing else except improvement in hygienic conditions, the skin lesions disappeared and also the pulmonary and other symptoms. For a long time he had shown no evidence of blastomycosis except an enlarged epididymis. The case was presented as interesting because it was one of systemic blastomycosis, which had gone on in comparatively good health for two years and a half.

BLASTOMYCOSIS OF THE NOSE. PRESENTED BY DR. PUSEY

The patient was a, man aged 30, who had a large, cauliflower tumor covering the whole of the tip of the nose. It had begun as a "pimple" a few weeks before and rapidly grown to its present size. He had been taking potassium iodid, 120 grains, which he thought had checked the growth. Blastomycetes had been recovered from the pus.

BLASTOMYCOSIS. PRESENTED BY DR. HARRIS

The patient was a man aged 37, who presented a lesion on the side of the scrotum, which had been present for seven years. It began as a pustule on the penis which extended to the pubes and lower part of the abdomen, into each groin and along the perineum, involving the anus and adjacent part of the buttocks.

The lesion showed a large central scar. The border was made up of an elevated, papillomatous patch, showing numerous miliary abscesses. The blastomyces had been demonstrated.

BLASTOMYCOSIS. PRESENTED BY DRS. HARRIS AND STILLIANS

The patient was an Italian, aged 72. The lesions had been present for years and had gradually spread. The patient had refused consistent treatment. He presented a band of typical blstomycetic dermatitis, extending across the forehead, and extensive contractible scars over both cheeks which had caused ectropion of the lower lids and had resulted in destruction of one eye and serious damage to the other.

BLASTOMYCOSIS. PRESENTED BY DR. MACKEY

The patient was a woman, aged 27, who presented lesions beneath the eye, producing scarring with ectropion and small, dusty red macular patches on

the forearm and ankle. The lesion on the cheek began four years ago and had been treated with the Roentgen ray at one of the hospitals. The other lesions had received no treatment. Blastomyces were demonstrated from scrapings.

BLASTOMYCOSIS. Presented by Dr. Mackey

The patient was a male, aged 42, who presented nodular, crust-covered lesions over the nose and upper lip, which had been present for over six months. Blastomyces were found in scanty purulent drops which were expressed from the border of the lesions from both the nose and lip. The serpiginous outline of the lesion over the nose suggested tertiary syphilis, and the Wassermann test was + + +, and for verification another Wassermann reaction was likewise triple positive.

DISCUSSION

Dr. Ormsby said his cases had been shown to demonstrate the effect of salvarsan in blastomycosis. During the summer, the first patient had had four injections of salvarsan, which apparently had little effect, and immediately after that he was given potassium iodid, under which the lesions cleared up very promptly. The patient with lesions about the elbow had had a large amount of salvarsan and potassium iodid, but had shown no improvement. These cases demonstrated that salvarsan was of value in some cases and not in others. The second patient had also had treatment with the Roentgen ray.

Dr. Heidingsfeld asked why Dr. Ormsby did not consider favorably, resection of the elbow with the object of arresting the condition and saving life. He had found it a method that was efficacious in some of his very severe, persistent forms of blastomycosis that involved the deeper tissues and the bones, and which resisted all other forms of therapeutic effort.

Dr. Ormsby, replying to Dr. Heidingsfeld, said that most surgical measures in such cases had been detrimental. This patient had a joint resection early, but it apparently did not improve the condition. The blastomycosis in this case seemingly began in the elbow joint and later attacked the skin.

Dr. Pusey said when his patient first came he had lesions over his arms and face and trunk, more than could be counted. He received generous doses of potassium iodid. The speaker did not recall any other cases of blastomycosis in which the lesions disappeared from potassium iodid alone. He said this patient had been symptomatically well part of the time for three years, with nothing but potassium iodid.

The other case came with a history of having had a diagnosis of blastomycosis, and he had potassium iodid up to 130 or 140 grains a day, with almost no effect on the lesions. Dr. Pusey had grown to feel that there was a good deal of difference in the various blastomyces and their reaction to the remedies we used. He agreed with Dr. Ormsby, that they did not do very well from surgical treatment. One patient had been operated on for various things until he had a bad deformity of the leg and he still has his blastomycosis.

Dr. Pusey said he had recently seen a surgical case in another clinic in which the man presented himself with a blastomycosis of the mouth, and the lesion was excised as a carcinoma; in two years, the man returned with his whole face destroyed from blastomycosis.

Dr. Quinn said he had a patient whom he saw occasionally, in whom the diagnosis had been made on the Pacific Coast. The lesion had started on his ankle and his foot was amputated above the ankle. Later, lesions developed on the other leg and up near the shoulder. The leg seemed to be improving but there was still an active process in the shoulder. He thought the operation was a failure.

Dr. Foerster asked if Dr. Pusey's first case had been in this city all the time. He had heard that change of climate had some influence on the disorder

and suggested the use of copper sulphate as an alternative treatment for the potassium iodid.

Dr. Butler said that surgical interference in most of these cases consisted in curetting the lesions, with recurrence of the disease in most instances; he thought if excision was given the choice, more cures would result, as the internal treatment of blastomycosis was in many instances purely palliative.

Dr. Mackey thought that Dr. Ormsby's case was one he had curetted a number of years ago, in an effort to eradicate the lesions entirely, and the present condition exemplified how futile curetting proved in some instances, at least.

The case shown by Dr. Harris, was one which the speaker had been privileged to observe for a number of years and which he had shown before the Society a few times. Notwithstanding that the patient had been very indifferent in following any line of treatment, small dosage of potassium iodid for a few weeks produced a marked clearing up of the lesions and a similar but more rapid effect was produced by injections of salvarsan, emphasizing the point that a certain class of cases responded very easily to systemic treatment.

The speaker thought that the case which he presented, with lesions on the nose and upper lip, was one of especial interest from the fact that lesions over the nose bore such a striking resemblance to nodular syphilis and that the two Wassermann tests had been triple positive.

Dr. Ravogli thought that potassium iodid was very helpful in some cases of blastomycosis and of no benefit in others; he thought the location of the lesions had something to do with it. He stated that he often removed the granulations with the curet and then tried to cauterize with some remedy that would kill the blastomyces. For this purpose he found lysol of great value. He also used castor oil and balsam of Peru in almost equal parts. The Canada balsam also killed the blastomyces as seen in the microscopic examinations. In cases of very deep blastomycosis he thought surgical intervention did no good; the cases in his service had died of blastomycetic sepsis.

Dr. Harris said that about five years ago he showed a young woman with blastomycosis of the lower extremities which extended from the knee almost to the ankles. Blastomyces had been found by cultures. She improved greatly on salvarsan. About three years ago he had shown another case, a patient whom Dr. Ormsby had seen, who had a diffuse blastomycosis across the chest and that case recovered under salvarsan. He died later of erysipelas and at necropsy no blastomyces could be demonstrated. He had come to consider salvarsan almost a specific for blastomycosis.

MORPHEA GUTTATA. Presented by Dr. Ormsby

The patient was a woman, aged 31, who was first seen May 16, 1916. At that time the lesions were of two years' duration. They had started as a white area, the size of a fifty-cent piece, on the shoulder, and had gradually spread. Shortly after the beginning, a brown streak, 3 inches wide, was noted, which extended from the middle of the forearm to the spine. On first examination, the lesions were found to be located on the forearms, on both surfaces, the extensor surface being markedly involved. The lesions varied in size from pinhead to smaller than a split pea. They were level with the skin and of a dead-white or bluish-white color. There were no keratotic plugs, but occasionally a follicular opening. The lesions were arranged in groups and sometimes in lines. In certain areas, atrophy was present, with moderate depressions and wrinkling of the skin. On the right forearm, the relic of a hyperpigmented streak extending to the middle arm, was present. Over the left shoulder were several groups of lesions, forming patches the size of a silver dollar. Individual patches devoid of pigment and surrounded by a rim of hyperpigmentation were present. The individual white lesions were elevated, with rectangular bases and flat tops. No plugs were present. In places where the lesions had disappeared, an almost imperceptible scar was present. Over the lower dorsal

and upper lumbar vertebrae was a hyperpigmented area two and a half by half an inch in size. There was also a hyperpigmented area over the head of each femur. When shown Jan. 16, 1917, some involution of lesions had occurred.

LUPUS ERYTHEMATOSUS OF THE FACE. Presented by Dr. Ormsby

The patient was a woman, aged 41, who had had the disease for four years. It was an extensive case, which had resisted treatment of other sorts, but had largely yielded to exposure to the quartz light. This had been used irregularly since June, 1916, during which period ten treatments had been given.

ANGIOMA SERPIGINOSUM. Presented by Dr. Stillians

The patient was a Polish woman, aged 30, who first noticed the red spots on her neck in 1913. These gradually spread and when first seen by the speaker in 1915, involved the upper portion of the neck and lower third of the right cheek. Since then there had been a marked regression of the lesions. At the time of presentation they involved only a small area along the jaw bone perhaps one third of the original extent. She received three very light roentgen-ray treatments in 1915, which may or may not have produced this effect.

The lesions consisted of bright red, punctate macules and papules interspersed with short, wavy linear telangiectases on apparently normal skin. At the posterior portion of the involved area several oval or round, pale areas were present, probably very slight scars.

DISCUSSION

Dr. Irvine said the interesting feature of the case was that the patient had apparently improved after roentgen-ray treatment.

Dr. Pusey did not think that the little spots were the effects of the roentgen ray, but he agreed with Dr. Stillians' diagnosis.

Dr. Stillians said the patient had received no roentgen-ray treatment until after he had seen her and made the diagnosis. The lesions had been spreading for two years before he saw her. He had given her three very light roentgen-ray treatments, after which she failed to return for further treatment. Whether the slight amount of roentgen rays had had anything to do with the improvement in the lesions, he could not say.

CARCINOMA. Presented by Dr. Quinn

The patient was a man, aged 54, who presented a carcinoma of the neck which had been present for eleven years. There was a history of a chancre twenty years ago. The lesion was about the size of a half dollar with indurated border and a broken down central portion.

CASE FOR DIAGNOSIS. Presented by Dr. McEwen

The patient, a man, aged 31, employed in a packing house, entered the County Hospital three weeks previously, with an eruption which presented the clinical appearance of an acute dermatitis involving the feet and lower portions of the legs. In his work, which had to do with the cleaning of the intestines of animals, his feet and parts of his skin were more or less constantly wet. Subsequently other lesions appeared on the body. These were discrete, from coin-sized to palm-sized, yellowish-brown, scaling slightly, with a tendency to moisture on opposed surfaces. There was much itching. Some of the lesions were suggestive of pityriasis rosea, others of dermatitis seborrheica. The Wassermann test was negative, and repeated examinations for fungi had yielded no results. The case was presented for diagnosis.

ACQUIRED XERODERMA PIGMENTOSUM. Presented by Dr. Harris

The patient was a woman, aged 32. Nine years ago, following a pregnancy, she had what was probably an eczema which began on the hands and arms

and extended over the body. For seven years she had noticed that the skin of both arms became very red, scaly and sore during the summer, and gradually pigmented spots had appeared. The trouble appeared every year, beginning about April and disappearing gradually about September.

DISCUSSION

DR. HARRIS thought that the thing of interest was the fact that during the summer months the skin of the face and arms becomes very red and scaly; during the winter this cleared up, leaving the peculiar spots of pigmentation.

DR. LIEBERTHAL stated that he had seen the patient two years ago for a pruritus vulvae. He could not accept the diagnosis of xeroderma pigmentosum. He had seen a case which was exactly a duplicate of this one, except that in addition to the pigmentation, there were various tumors on the skin, and he thought this case would turn out to be one of neurofibromatosis.

DR. PUSEY did not believe it could be considered a case of acquired xeroderma pigmentosum unless we accepted as xeroderma pigmentosum many cases showing premature senile changes in the skin as the result of light. He thought that all degrees of these cases could be found from the patient who developed a senile skin with senile warts and epitheliomas in old age, down to the cases of true xeroderma pigmentosum in which the skin was so sensitive to light that senile changes of extraordinary degree, followed by carcinoma, occurred in children still in their infancy. He thought all these changes represented a reaction to the actinic rays of light. In his opinion it was not infrequent to see cases of the type of Dr. Harris' case, and he did not think they should be called xeroderma pigmentosum.

DR. HAASE agreed with Dr. Pusey in regard to the reaction to light. He said that in the South they saw a great many people who took on such spots early in life, perhaps not so much as this woman showed on the chest.

DR. HARRIS would not concede that because the skin was old it was sensitive to light. This case gave a definite history that light had an effect on her skin. The spots were much darker and more irregular in shape than were freckles following sunburn.

CASE FOR DIAGNOSIS. PRESENTED BY DR. SHAFFNER

The patient was a child aged 2 years, with lesions on the chin, chest and upper back which one year ago had resembled verruca plana juvenilis.

There are about fifty pin-head sized lesions scattered over the upper back, chest and chin, flat topped, very slightly papular, disappearing almost entirely on pressure, with no definite grouping. In several of the areas there was a very slight tendency to telangiectasis.

DISCUSSION

DR. STOKES thought that the macules were telangiectases. He had never seen any other case of angioma serpiginosum, but they impressed him as being of the type seen in connection with thyroid involvement.

DR. BUTLER considered it a case of angioma serpiginosum, on account of the reddish, atrophic appearing, branny desquamative area on the face, and the reddish, punctate, impalpable dot lesions on the neck.

DR. FOERSTER said that numerous small angular papules were visible on the neck and that this was not in the picture of angioma serpiginosum.

DR. SHAFFNER said that when he first saw the case it looked like a typical case of verruca plana juvenilis, but the lesions had receded so in the past year that they were very rarely papular. He had presented the case for diagnosis and agreed that it seemed like an angioma serpiginosum but did not think that it was as evident as some of the others considered it.

ANGIOKERATOMA. PRESENTED BY DR. HARRIS

The patient was a lady, aged 21. For three or four years the patient had noticed that with the onset of winter red spots would develop on the fingers and toes, accompanied by some itching and burning when the extremities got warm. The same spots were affected each year. Most of the lesions showed a dilated blood vessel in the center and some of them developed a hyperkeratosis over them.

DISCUSSION

DR. SUTTON had found angiokeratoma of the extremities very rare in this country. Angiokeratoma of the scrotum, such as was originally described by Fordyce, in 1896, was comparatively common, however, and, largely through the kindness of his various genito-urinary associates, he had seen more than a score of examples during the past five years. These patients as a rule suffered from venous obstruction or some other circulatory defect. Persons who were the subjects of "chilblain circulation" were frequent victims. In the cases of angiokeratoma of the scrotum, he had seen fragmentation of the elastic tissue in the vicinity of the vessels, and he thought it would be interesting to examine similarly stained sections from these cases of angiokeratoma of the extremities, and also from cases of chilblain.

MELANOTIC SARCOMA. PRESENTED BY DR. WAUGH

The patient was a man, aged 26, who presented a dark brownish, pigmented mole which was slightly elevated and the size of a large pea, on the right scapular region. The lesion had been present for years. In November, 1915, it began to enlarge and one month later was the size of a small walnut. It was removed by a hair ligature, but recurred immediately with involvement of the axillary glands. The growth at the site of the original lesion was removed surgically in March, 1916, and before the incision healed he had a recurrence with grouped nodules at the site of the operation. At the same time there was marked adenopathy of the right axillary glands. Pigmented lesions on the body had recently appeared. A histologic examination of the growth that was removed surgically proved to be sarcoma.

MULTIPLE KELOIDS OF THE STERNUM. PRESENTED BY DR. E. P. ZEISLER

The patient was a white man, aged 26, who presented multiple, transverse, bandlike keloids of the sternum and back which began at the age of ten years. There was an associated follicular acne of the back.

PAPULO-NECROTIC TUBERCULID. PRESENTED BY DR. E. P. ZEISLER

The patient was a man, aged 28, who had been operated on twice for tuberculous glands of the neck. The eruption on the back and neck consisted of papulo-necrotic lesions, which had been present for two years. The Wassermann reaction was positive, but the lesions had not cleared up under antispecific treatment. Tuberculin tests were positive.

PURPURIC ERUPTION. PRESENTED BY DR. E. P. ZEISLER

The patient was a boy, aged 13 years, who had pulmonary tuberculosis accompanied by a purpuric eruption on the arms and neck, of three weeks' duration.

DERMATITIS HERPETIFORMIS. PRESENTED BY DR. QUINN

The patient was a man, who had had the present trouble for one year. The lesions were grouped, erythematous and vesicular, symmetrically arranged, appearing over the entire body. They resembled somewhat a pityriasis rosea.

DISCUSSION

DR. COLE was very much interested in the case because the patient gave a history of itching. He thought it might be a case of mycosis fungoides in the premycotic stage. Moreover, the lesions were more or less annular in character.

DR. FREEMAN was of much the same opinion as Dr. Cole. The patient had first said that he had taken no medicine, but later admitted that he had, and he was under the impression that there might be some drug eruption but it was very likely that it was the premycotic state of mycosis fungoides.

DR. RAVOGLI agreed with Dr. Cole in part, but thought that considering the short time which had elapsed it was more likely a pityriasis rosea; but what was pityriasis rosea? He remembered that formerly such cases had been called herpes tonsurans. In some cases he had found small spores of the trichophyton, and he always had the idea of the possibility that these spots of pityriasis rosea came from a peculiar kind of trichophyton.

DR. HARRIS stated that he had seen a number of cases recently and thought this case belonged to the same group. Some of the cases resembled pityriasis rosea, others seborrheic dermatitis, he did not think they were either. In some of these cases the eruption of this type in parts of the body became a frank eczema. He considered it a parasitic affair but had not been able to demonstrate the fungus. He had been using sulphur and ichthyol with good results.

PAGET'S DISEASE. PRESENTED BY DR. MACKEY

The patient was a woman, aged 45, who, though married, had never been pregnant. The present trouble began four years ago, had gradually increased, had at times bled freely, and for some months had been painfully tender to pressure. On the breast, not involving the nipple or areola, but extending from the lower edge of the areola downward, was a circumscribed, indurated, erythematous, somewhat scaly patch, half the size of the palm of the hand. Prior to the application of a mild white precipitate and salicylic acid ointment there had been slight crusting and fissuring.

TERTIARY SYPHILITIC LESIONS OF FACE. PRESENTED BY DR. MACKEY

The patient was a woman, aged 71, who presented a palm-sized patch at the angle of mouth, extending backward over the cheek, which had been present for two months. The lesion resembled a circumscribed area of well developed dermatitis. This same patient had been before the Society a few months ago, displaying more lesions of this same type. When she was first seen, four years ago, on account of their distribution and character of scales, the lesions were much like those of lupus erythematosis. The lesions disappeared completely under antisyphilitic treatment, reappearing again in a few months, after the patient had discontinued her treatments. This made the fifth time that the patient had returned for treatment.

SCLERODERMA. PRESENTED BY DR. HARRIS

The patient was a woman, aged 55, who for years had had itching and thickening of the skin of the legs and chest.

MYCOSIS FUNGOIDES. PRESENTED BY DR. QUINN

The patient was a woman, aged 20. The trouble began as an eczematoid eruption four years ago. The fungoid lesions had been present for about one year. They developed rapidly after an injection of salvarsan.

The blood count was normal; there was no sugar or albumin in the urine. When presented, the entire body was covered with fungoid tumors, with the exception of the palms and soles.

DISCUSSION

DR. QUINN said that some one thought the patient was an old woman, but she was a girl aged 20, who had had the tumor lesions for only about a year. He had tried almost every kind of drug treatment, but nothing except the roentgen ray seemed to be of any use.

TUMOR OF THE UPPER LIP. PRESENTED BY DR. STILLIANS

The patient was a woman, aged 50, who presented a soft, elastic mass in the upper lip. The lesion had appeared several years ago and had been gradually increasing in size. For about two years there had been a small red papule in the skin above the center of this mass. It was not tender or painful, was about half an inch in diameter and discoid in shape and could be palpated as well from the mucous surface as from the skin.

DISCUSSION

DR. FOERSTER thought it would be a difficult matter to make a diagnosis, but from the fact that the upper part of the face, and the nose particularly, was a favorite site of dermoids, and from the location and the history given, this was to be thought of in connection with the case.

PARAPSORIASIS EN PLAQUES. PRESENTED BY DR. HARRIS

The patient was a man, aged 25, who for eight years had been developing erythematous, scaly patches on various parts of the body. There was no itching but the thickening of the skin caused it to crack at times.

CASE FOR DIAGNOSIS. PRESENTED BY DR. HARRIS

The patient was a man, aged 31, who for six or seven years had had sharply circumscribed, scaly patches in the scalp. The scales formed thick plates which were closely adherent and would bleed on removal. There was some tendency to symmetry, but practically no itching. For two years he had had a scaly condition of the scrotum. Repeated examinations had revealed no fungi.

BENIGN CYSTIC EPITHELIOMA. PRESENTED BY DR. HARRIS

The patient was a woman, aged 38. Twelve years ago she had a mole over the right zygoma removed. She thought that three or four months later some small papules appeared over the region of the masseter muscle. These had grown slowly and increased in number.

DISCUSSION

DR. SUTTON thought the designation of acanthoma adenoides cysticum a much more appropriate one than multiple benign cystic epithelioma. As a rule the lesions disappeared promptly under roentgen therapy.

DR. HEIDINGSFELD said that he had seen four or five examples of this condition in one Kentucky family, in which there was a strong hereditary tendency. Fulguration gave him the most prompt and best results.

DR. HARRIS said that the patient wished roentgen-ray treatment but that he had refused to give them unless the lesions became more noticeable.

ACUTE LUPUS ERYTHEMATOSUS. PRESENTED BY DR. HARRIS

The patient was a man, aged 33, who presented numerous lesions which had been present for seven weeks. They were scattered over the face and neck and varied in size from 0.5 to 4 cm. in diameter, were of a bright red color, slightly elevated and had few scales.

TRICHO-EPITHELIOMA OF EYELIDS. PRESENTED BY DR. HARRIS

The patient was a woman, aged 39, who presented lesions of the eyelids which had been present for years. There were six or eight yellowish-white papules on each eyelid, toward the inner canthus. They were all about the size of a small split pea. They were not as yellow as xanthoma.

NEVUS ANEMICUS. PRESENTED BY DR. HARRIS

The patient was a girl, aged 17 years, who had a white spot in the middle of the back which became much more pronounced when the area was rubbed with ice. On application of heat it did not get as red as the surrounding skin. (This patient was shown at a previous meeting.)

DISCUSSION

DR. PUSEY said he was interested in seeing how relatively frequent such cases were if one looked for them. He suggested that some of the cases of so-called "white spot disease" might be nevus anemicus. He did not mean the typical cases of white spot disease that might be morphea, but he thought that one might have minute white spots of nevus anemicus over the area where white spot disease occurred, and in view of the fact that every one who knew the words "white spot disease" could tell the disease the minute they saw it because of its suggestive name, some such cases might be due to a small nevus anemicus.

TUBERCULID. PRESENTED BY DR. SHAFNER

The patient was a woman, aged 25, married, who had had the skin trouble for one and a half years, and gave a history of having had a previous attack three years ago, that cleared up entirely. The lesions occurred in crops and the patient believed that some disappeared entirely. She gave a history of having had a peritonitis several years before her marriage. The condition was subacute in that six weeks elapsed before the onset, and during which time she left the hospital for several weeks. Her physician told her that at the operation he found that the intestines were all matted together and that one ovary and tube were much smaller than those of the opposite side. The skin condition followed that operation. From her history it was inferred that she had a tuberculous peritonitis.

The lesions resembled syphilis so much that a Wassermann test was done, which proved to be negative. The patient was shown at the December meeting at which the majority of the men considered the case to be a pityriasis lichenoides chronica (Juliusberg), but this diagnosis was made before the above history was elicited and before biopsies were made. The latter showed giant cells and the general arrangement of papulo-necrotic tuberculids. Within the last few days the patient had developed a new set of lesions distinctly tuberculid in nature.

DISCUSSION

DRS. SWEITZER, HAASE AND STOKES thought it was a tuberculid.

DR. IRVINE said the case did not appear to him as a tuberculid. There seemed to be a number of pigmented lesions and some depressed scars, and while there was a very little bit of scaling in some of the lesions it seemed to him it was not more than would be present in a case of syphilis.

DR. SHAFFNER said that when the case was first presented he thought that the diagnosis of pityriasis lichenoides chronica was a good one, and the scaling and arrangement of the lesions spoke in the favor of such a diagnosis. However, the history of the patient as to her old tuberculous peritonitis, the new crop of distinctly tuberculid-like lesions, groups of necrotic papules, and the biopsy findings made it apparent that the case was one of tuberculid.

ACNE DUE TO TAR. Presented by Dr. McEwen

The patient was a woman, aged 30, who was employed in a harvester plant, and worked with binding twine. The eruption first appeared about six months ago, on the face, then on the forearms. The lesions consisted of small papules, pustules and comedones, and were improving under treatment. The Wassermann reaction was negative.

DISCUSSION

Dr. Pusey said he had had an opportunity of seeing a number of similar cases in persons who worked with binding twine and had investigated the conditions of the workers and found that it was an oil acne. The material of which the twine was made was immersed in oil in the course of manufacture and it produced some sort of acne as that seen in other oil workers. The localization in this case was not quite in accord with other cases he had seen.

Dr. Ormsby stated that about three years before, he had visited some plants where binding twine was being manufactured, in an effort to determine the cause of a peculiar acneiform eruption occurring in employees of these places. In this investigation, it was found that about 25 per cent. of the people employed were affected, and that the lesions in all cases were largely limited to the arms, forearms and abdomen. They were acneiform in character, and some left comparatively deep scars. It was found that the company was using an oil on the twine, which prevented certain insects in the field from cutting the twine, which in the past had been a serious handicap. Since using the oil, however, no trouble in this respect had occurred. The composition of this oil could not be determined accurately, as it was a secret preparation. That it was responsible for the acneiform lesions was proved by the fact that all those workers who handled the hemp before the oil was applied were exempt, while those through whose hands it passed after being immersed in the oil were affected.

The company's physicians had already instituted a system of bathing with soap and water, which the company insisted on having the employees carry out each day before leaving the factory. In this way the trouble was gradually being overcome.

PROBABLE TUBERCULOUS LESIONS OF THE LUNGS; SYPHILIS. Presented by Dr. McEwen

The patient was a colored woman, aged 20, who showed evidences of pulmonary tuberculosis, an extensive skin eruption, and a positive Wassermann reaction. She was admitted to Cook County Hospital on Dec. 23, 1916, the skin lesions having appeared about three weeks previous. The temperature had varied from 100.5° to 103° F., and became normal on December 8. Repeated sputum examinations had been negative. The skin lesions were macular and papular; the former were mostly pigmentary; the latter in some instances showed a tendency to necrosis in the center, with the formation of a crust under which would appear a shallow scar. The lesions appeared in crops. The patient's mother and sister had died of pulmonary tuberculosis. The patient was presented for diagnosis between syphilis and tuberculid.

DISCUSSION

Dr. Ravogli thought the case was syphilis, probably a late papular syphilid.

Dr. Haase thought the case was unquestionably one of syphilitic exanthem. He said the lesions cleared up too rapidly for a tuberculid. Attention had been called to the fact that the woman had rise of temperature, and while that might have been due to the condition in the chest, the speaker thought it should not be forgotten that a rise in temperature occurred in syphilis as well as in other conditions.

Dr. Harris did not think that the patient should be convicted of having syphilis because the woman was colored. She had come with the physical find-

ings of tuberculosis and had been in the hospital for several weeks, developing crop after crop of the eruption. They underwent necrosis, forming a crust which fell off and left a small pitted scar. The speaker thought they did not correspond with the pustular lesions seen in syphilis. He thought it was surely a tuberculid.

DR. MCEWEN said that while a few of the lesions looked like those of a tuberculid, the majority of them he regarded as expressions of syphilis.

SYPHILIS WITH LUPUS ERYTHEMATOSUS. PRESENTED BY DR. POTTHOFF

The patient was a woman with a syphilitic history of eighteen years' duration. One or two years previously, she had an eruption on the ears which spread to the face, the areas over the zygomatic and malar bones and also over the nose, involving the bridge and alae. The lesions were covered with dirty, grayish, adherent scales, irregular in shape and slightly elevated. She had received intensive antisyphilitic treatment for the past several months but showed very little improvement.

DISCUSSION

DR. IRVINE thought it was perhaps uncommon but not unique to have lupus erythematosus associated with syphilis. He had had one or two such cases which had cleared up as far as the syphilis was concerned, but the lupus erythematosus had remained. He thought that was the condition in this case, but that the crust was more of a seborrheic nature than was ordinarily seen in lupus erythematosus.

KERATOSES, TELANGIECTASES. PRESENTED BY DR. QUINN

The patient was a woman, aged 40. Six years ago, following an operation for appendicitis, she began to be troubled with dryness of the skin of the palms which increased, with scaling, until the hands and arms above the elbows were involved. Swelling and loss of sensation followed. The trouble then appeared in the feet, increasing more rapidly in the left foot until the skin was broken and a colorless serum exuded, burning every surface it touched. Intense suffering resulted in loss of the use of the limb, until crutches became necessary.

DR. QUINN said that when he first saw the patient she had lesions which extended above the knees and above the elbows on the anterior surface of the arms. Some of the lesions then resembled psoriasis. They all cleared up except the ones on the soles and palms; occasionally there were warty lesions on the palms. So far as the patient knew she had had no arsenic, but she had had some roentgen-ray treatments.

DISCUSSION

DR. WILE thought it was just the sort of an effect that could be obtained from the use of roentgen rays, although he did not think that was the cause of it in this case.

MULTIPLE SARCOMATOSIS. PRESENTED BY DR. ORMSBY

The patient was a man, aged 52. He had been shown at the November meeting of the Society. Since then new lesions had continued to develop more rapidly. Older ones were removed by treatments with radiotherapy. At present, the patient was bed-ridden, and had flat, nodular lesions over the entire body. Some were surrounded by a hemorrhagic areola. The patient was evidently nearing the end.

DISCUSSION

DR. SUTTON thought the result of the roentgen-ray treatments was wonderful. He said that as a rule, at the very best, one would not expect such a

patient to live for more than a few months, and this man was in far better condition than one would imagine he could be.

Dr. Pusey was much impressed by the evident improvement in the case.

GRANULOMA INGUINALE TROPICUM. Presented by Dr. Harris

The patient was a man, aged 22, who presented a lesion in the groin and on the penis. There was a painless swelling in the left groin which bled very readily. The condition had been present for six or seven months. The lesions looked like granuloma inguinale but could possibly be syphilitic. The patient had been seen only recently, and the Wassermann test had not been reported on as yet.

DISCUSSION

Dr. Ravogli said he rather frequently had seen cases of ulcers covered with vegetations in the inguinal region. He knew of many cases reported, especially by Italian medical officers who had occasion to observe cases among the Beduoins in Tripoli, which were the same kind of ulcers with vegetations, and they had all been called tropical ulcer. In his service among the colored people such ulcers were often found. He did not think he would call them tropical ulcer, but thought they were only tertiary syphilitic ulcers, which had remained there for a long time, badly cleaned or cleaned not at all. He thought this maintained such an irritation of the ulcerated surface that the papillae proliferated and produced the peculiar vegetating surface. He thought a good therapeutic measure was to scrape the surface deeply with the curet, remove the whole mass and then dress the wound with iodoform gauze, and so far he had had good results. He had recently operated on a colored woman who had these peculiar vegetations which had nearly closed the vagina, and he had removed them, and now she was getting well. He examined these granulations to see if a peculiar micro-organism could be found, but he had never found anything and had come to the conclusion that they were nothing but tertiary ulcers of syphilitic origin, which took on the peculiar granulating form. He called them syphilis vegetans.

Dr. Ormsby thought the ulcers were not syphilitic, but were due to some local infection. While many micro-organisms had been isolated from these cases, none had been proved specific.

Dr. Haase said he had seen two such cases in the past eighteen months. One had remained in the hospital for study for over five months, and he had examined repeatedly for an organism but failed to find anything. In both of the cases there was a pigmented patch which afterward broke down and became fungoid. He was satisfied that the lesions were not syphilitic, because these two negroes did not have syphilis. The lesions were scraped and cauterized without any results. The patients did not improve under antisyphilitic treatment and were transferred to the surgical service in which they were curetted and the skin graft attempted, but this was unsuccessful.

URTICARIA PIGMENTOSA (?). Presented by Dr. Ormsby

The patient, a woman aged 29, had suffered with the disorder for two years. She said that the lesions appeared suddenly, after taking a bath. They were generalized and symmetrical, and had not changed in appearance since their inception, nor had any disappeared. The lesions were papular, somewhat larger than a pinhead, yellowish-brown in color, and devoid of subjective symptoms. Friction induced little change. From time to time the color changed slightly, either red or brown becoming more prominent. An occasional attack of urticaria induced temporary itching. The histologic study revealed no mast cells.

DISCUSSION

Dr. Sutton said that until recently he had considered that only three kinds of urticaria existed—urticaria acuta, urticaria chronica (which might be either

an urticaria recurrens or an urticaria perstans), and the urticaria pigmentosa of Nettleslip. Recently, however, he had encountered a case of pigmentary urticaria in a young girl in which the lesions were entirely free of mast cells, just as in the case shown by Dr. Ormsby. Consequently, he believed that we would have to extend the list to include one more variety—urticaria pigmentosa without mast cells.

DR. PUSEY thought that from the histologic picture this could not be called a typical case of urticaria pigmentosa, but the Englishmen had studied these cases and described cases like that of Dr. Ormsby which were clinically cases of urticaria pigmentosa but without mast cell infiltration. He agreed with Dr. Sutton that such cases were another group in this same class. He thought they showed the clinical manifestations of urticaria pigmentosa but they were of another type.

DR. SWEITZER offered the suggestion that this be called a case of urticaria with pigmentation instead of urticaria pigmentosa.

DR. ORMSBY thought it would be interesting if it were proved that mast cells, which were characteristic histologically of the ordinary infantile cases of urticaria pigmentosa, were absent in the adult.

KOILONYCHIA, CONGENITAL ALOPECIA, AND DEFORMED TEETH. PRESENTED BY DR. ORMSBY

The patient was a boy, aged 14 years, well nourished in general, and intelligent. The hair was fine and scarce, presenting the appearance of monilethrix. No hairs of this type were present, however. The process appeared to be one of atrophy. There was some follicular keratosis. The nails were classical spoon nails, the concavity being sufficiently large to hold ten drops of water. The teeth were pegged and serrated.

DISCUSSION

DR. HEIDINGSFELD thought the case was of unusual interest in that it developed congenital anomalies of hair, teeth and nails. Most of the instances in the literature showed a relationship of these structures. He recalled an exception in his personal experience in which there was a complete congenital absence of all the finger and toe nails in a man, 65 to 70 years of age, in whom both the hair and teeth were abnormally well developed and well preserved.

DR. ORMSBY thought the interesting point in this case was the fact that this patient was the only member of the family showing changes in the hair, nails and teeth. In most of the recorded cases the disorder occurred in family groups.

ANGIOMA. PRESENTED BY DR. MACKEY

The patient was a man, who presented an angioma of the temple which had been present all his life. Nodules had developed during the last four years, and there were periodic attacks of profuse bleeding.

DISCUSSION

DR. WILE thought that it was probably an angiosarcoma developing from a large vascular nevus.

DR. STOKES had seen a case recently in a woman who had had such a lesion and had developed new papillomatous and pedunculated lesions from time to time. There had been nothing to suggest malignancy in his case.

DR. ORMSBY said that one of the lesions had been constricted by a string, and that the constriction might induce a malignant change.

DR. MCEWEN stated that he had only seen the case for a moment before bringing it to the clinic, and he had not noticed that the constriction and erosion at the base of the larger tumor was due to a ligature. The man had said that it had bled the previous night, saturating a large towel. He thought the lesion was undergoing malignant change in places.

DR. PUSEY said he had examined the case very carefully, and he was not inclined to believe it malignant; he had seen a good many cases of angioma in which these sessile tumors developed without any subsequent malignant history.

DERMATITIS HERPETIFORMIS; PSORIASIS. PRESENTED BY DR. HARRIS

The patient was a man, aged 27, who for four years had had attacks of dermatitis herpetiformis. During one of the attacks he developed a frank psoriasis. There was a history of a similar eruption some years before. The continued use of Fowler's solution produced an arsenical keratosis.

DERMATITIS HERPETIFORMIS. PRESENTED BY DR. MCEWEN

The patient was a man, aged 39, who was first seen in Cook County Hospital in October, 1914, at which time he presented lesions on the lips and in the mouth. While in the hospital he developed vegetative lesions under the arms and about the genitalia. The Wassermann test was then negative, and the patient had never had a sore on the penis. In February, 1915, there was a recurrence of the lesions under the arms and about the genitalia which cleared up in two months. In February, 1916, there was a recurrence of the vegetating lesions all over the body, accompanied by a little fever. The Wassermann reaction was again negative at this time. There was another recurrence in October, 1916, with vegetating lesions of the larynx.

DISCUSSION

DR. ORMSBY thought the case was one of dermatitis herpetiformis with vegetations. He said there was a so-called benign type of pemphigus vegetans, most cases of which were dermatitis herpetiformis with vegetative lesions occurring in association. He believed the case belonged to that type.

DR. MCEWEN said the man had suffered frightfully from the lesion in the mouth; he believed the suffering had been much more pronounced than was usually the case in dermatitis herpetiformis.

DR. PUSEY considered the case very interesting. He said there were great masses of vegetations about the mouth and the genitalia, and, in his experience, the cases in which there were mouth lesions had the worst prognosis.

ANGIOMA. PRESENTED BY DR. MACKEY

The patient was a 3-months-old girl baby, with a cavernous angioma involving the entire region of the left breast, with noticeable subcutaneous vascular dilatations radiating from the tumor. The patient was presented with the hope of suggestions as to treatment, without destruction of the future function of the mammary gland.

DISCUSSION

DR. MITCHELL thought that radium would be the proper treatment to employ.

DR. HAASE suggested the use of CO_2 snow unless one was fearful of destroying the nipple. If that did not prove effective, surgical intervention could be resorted to later, but he thought the whole thing could be destroyed by CO_2 snow.

DR. HEIDINGSFELD believed that one could get an excellent cosmetic result with carbon dioxid snow in this form of nevus. The nipple could be spared treatment for functional reasons and treated successfully with radium. Radium alone would also give a very successful and excellent cosmetic result.

DR. QUINN had seen several such cases treated with CO_2 snow and they had cleared up nicely.

DR. MCEWEN said he did not think there was any way in which the lesion could be destroyed without destroying the breast. He was inclined to question whether it could be managed with CO_2 snow, and he believed that the use of

radium or purely surgical methods would be preferable. In any event, a radical cure would mean the complete destruction of the breast, and in a female child he considered this point one of great importance.

DR. RAVOGLI thought the use of caustics in such an extensive lesion, the use of radium or electrolysis would endanger the life of the child. He thought such extensive nevi were much like a dystrophy produced by hereditary syphilis. With this idea he had covered the surface with mercurial ointment and given small doses of potassium iodid, and in several cases he had had results which he had never expected.

TUMOR OF THE LOWER LIP. PRESENTED BY DR. STILLIANS

The patient was a man, aged 25, occupied as a student and born in Russia. For the past three years he had noticed a swelling of the lower lip which was painless and troublesome only on account of the deformity. About two months before presentation, carbon dioxid snow was applied for fifteen seconds to the lip, and two weeks before presentation, a second application was made. The projection at the center of the diffuse swelling had appeared since this last treatment.

The lower lip was the site of a soft, elastic, compressible, bluish tumor, somewhat to the left of the median line, increasing the lip to about three times its normal size. In the center of this tumor was a crusted projection about 1.5 cm. in diameter and 0.5 cm. in height, firmer than the main mass and not at all tender. On removal of the thin crust, a bleeding surface was left.

DISCUSSION

DR. LIEBERTHAL believed it to be a granuloma.

DR. PUSEY thought it might be a granuloma, or a chancre, or a CO_2 ulcer kept open by maceration and infection.

DR. HEIDINGSFELD thought it was a granuloma and agreed with Dr. Pusey as to the question of the initial lesion. He considered an epithelioma out of the question, and did not believe it was a sarcoma.

DR. STILLIANS said that the case came to him about two months ago with what looked like a cavernous angioma in the lower lip, which had been there for several years. He applied CO_2 snow and two weeks later the patient returned with the elevated lesion. He was suspicious of sarcoma.

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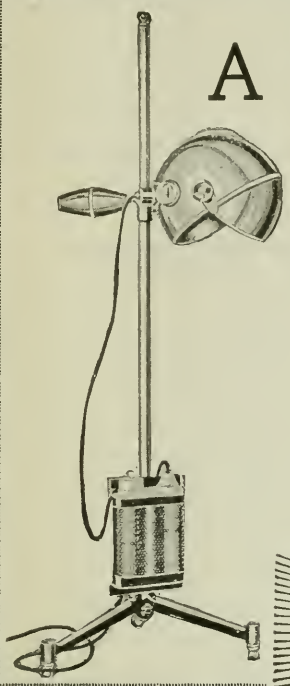

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